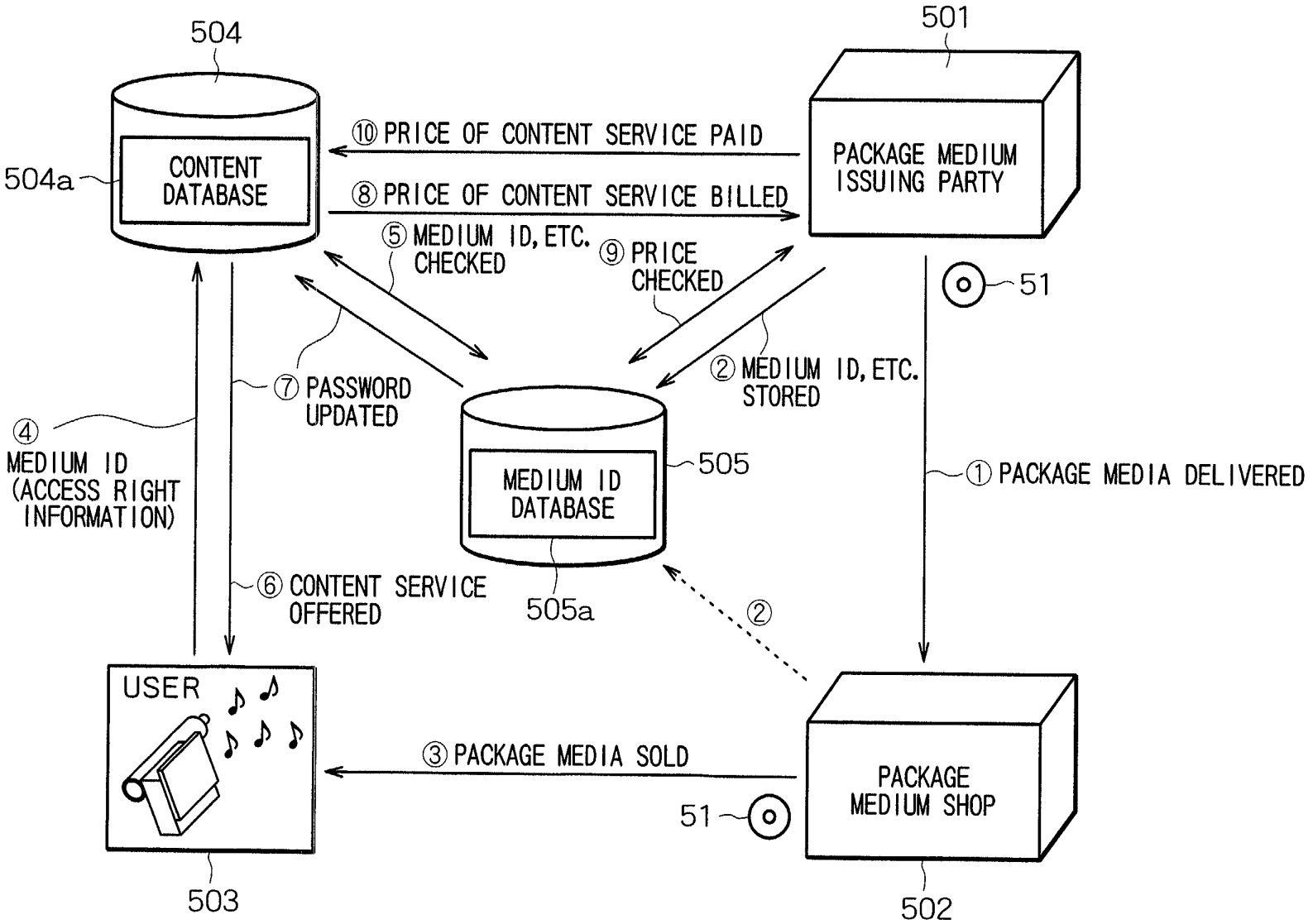
TOSHIBA 16172001

FIG. 1



SONY 81835

EP 0 822 547 A2

FIG. 2

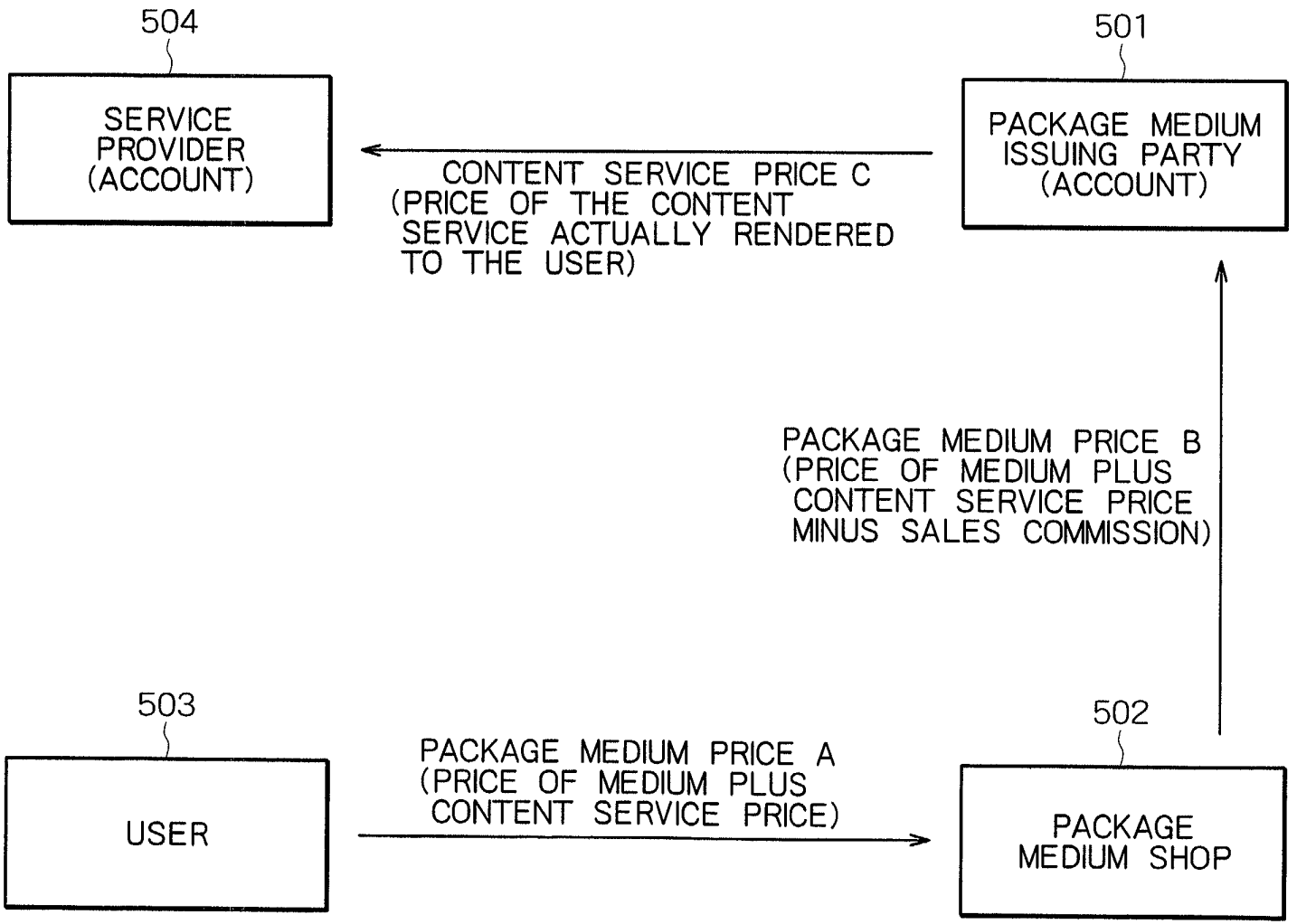


FIG. 3

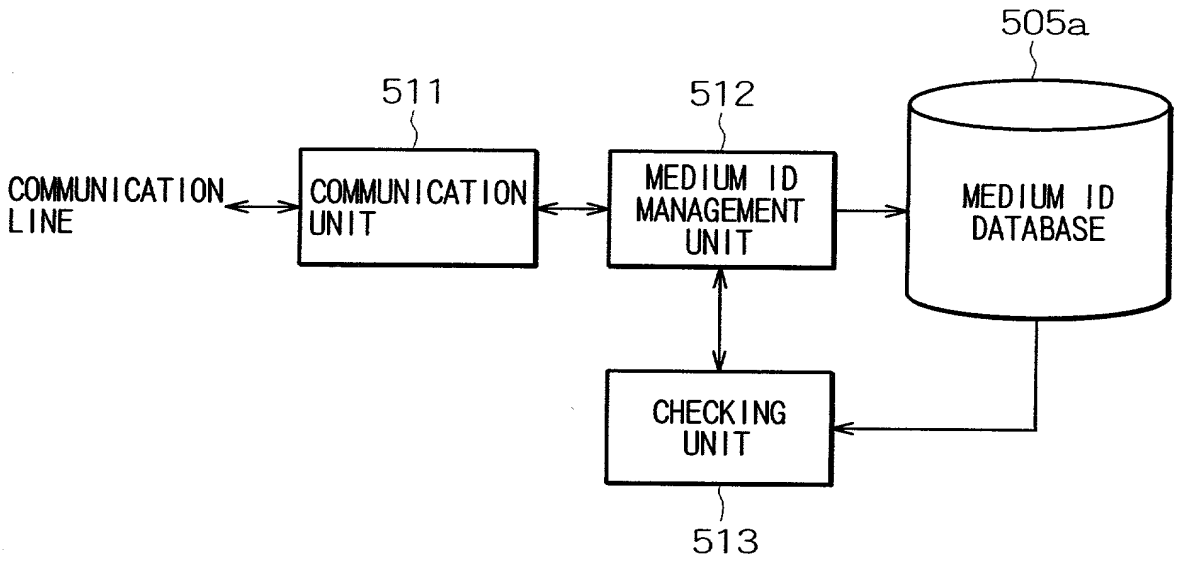

505a
511
512
COMMUNICATION LINE
COMMUNICATION UNIT
MEDIUM ID MANAGEMENT UNIT
MEDIUM ID DATABASE
CHECKING UNIT
513

FIG. 4

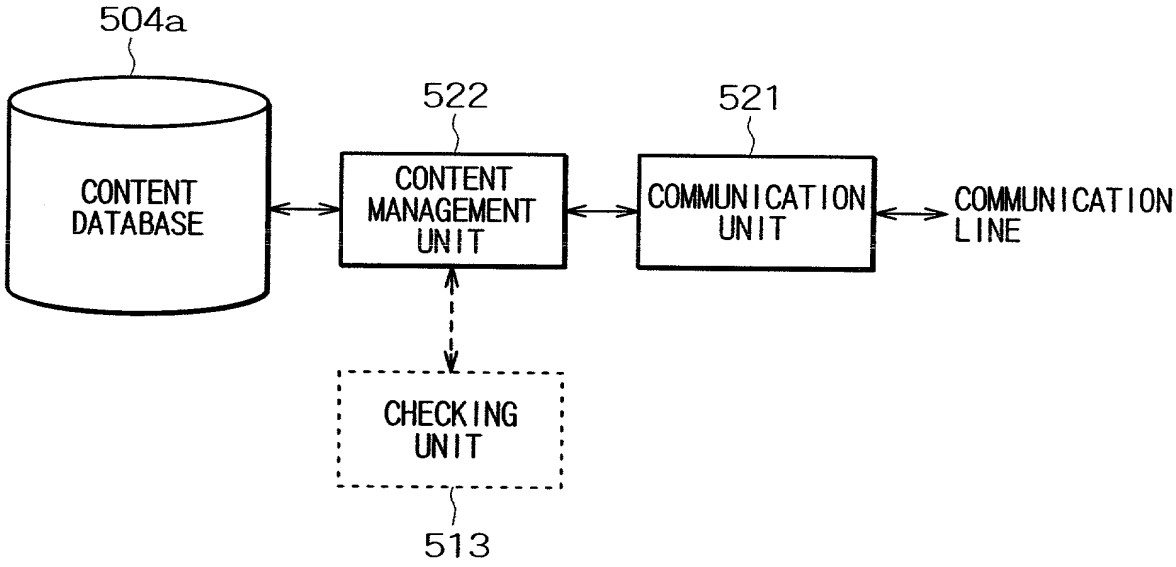

504a
522
521
CONTENT DATABASE
CONTENT MANAGEMENT UNIT
COMMUNICATION UNIT
COMMUNICATION LINE
CHECKING UNIT
513

FIG. 5A

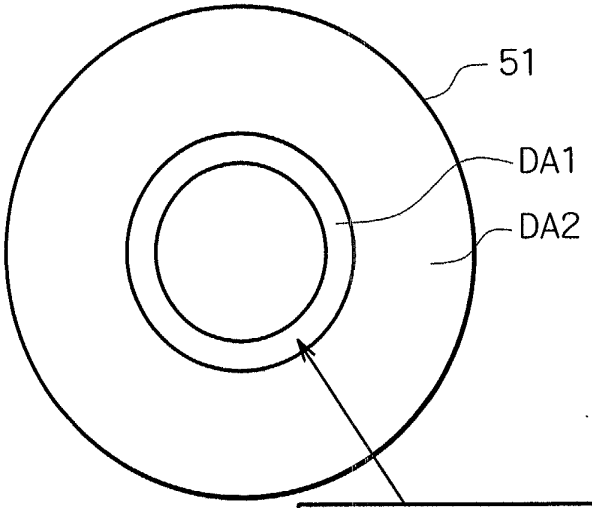


FIG. 5B

MEDIUM ID		ACCESS RIGHT INFORMATION		
ID	PASSWORD	CONTENT	UPLOAD	DOWNLOAD
10001A	qwerty	access Key	0 (AUTHORIZED)	0 (AUTHORIZED)

FIG.6

MEDIUM ID		ACCESS RIGHT INFORMATION		
ID	PASSWORD	CONTENT	UPLOAD	DOWNLOAD
10001A	qwerty	/media/id/1001A/access Key	0 (AUTHORIZED)	0 (AUTHORIZED)
10002B	yuiop@	/media/id/1002B/access Key	1 (UNAUTHORIZED)	0 (AUTHORIZED)
10003C	asdfg	/media/id/1003C/access Key	1 (UNAUTHORIZED)	0 (AUTHORIZED)
10004A	zxcvbn	/media/id/1004D/access Key	1 (UNAUTHORIZED)	0 (AUTHORIZED)
≈	≈	≈	≈	≈
90009X	!" #$%&'	/media/id/9009X/access Key	1 (UNAUTHORIZED)	0 (AUTHORIZED)

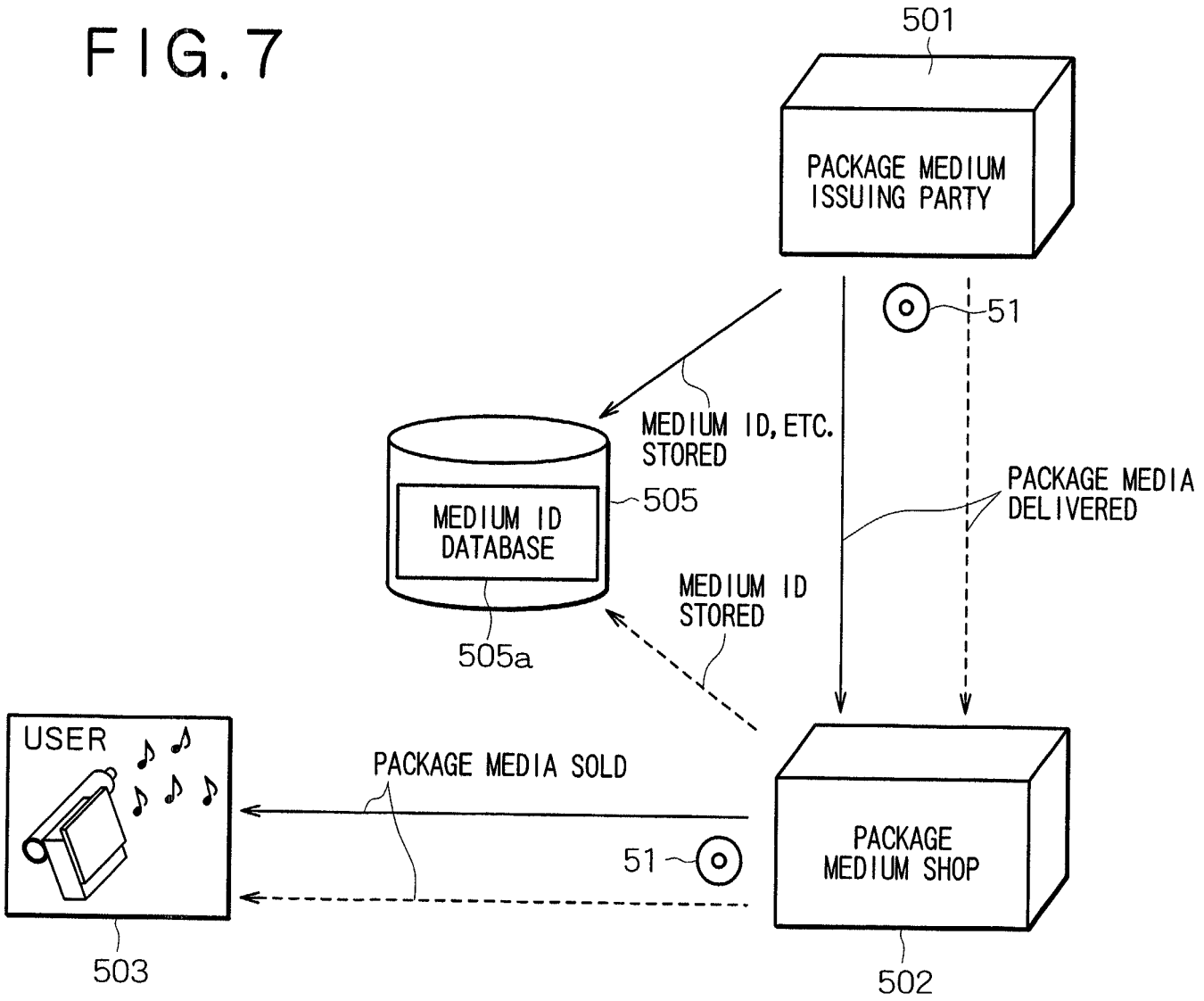

501
PACKAGE MEDIUM ISSUING PARTY
51
MEDIUM ID, ETC. STORED
MEDIUM ID DATABASE
505
505a
PACKAGE MEDIA DELIVERED
MEDIUM ID STORED
USER
PACKAGE MEDIA SOLD
51
PACKAGE MEDIUM SHOP
503
502

FIG. 8

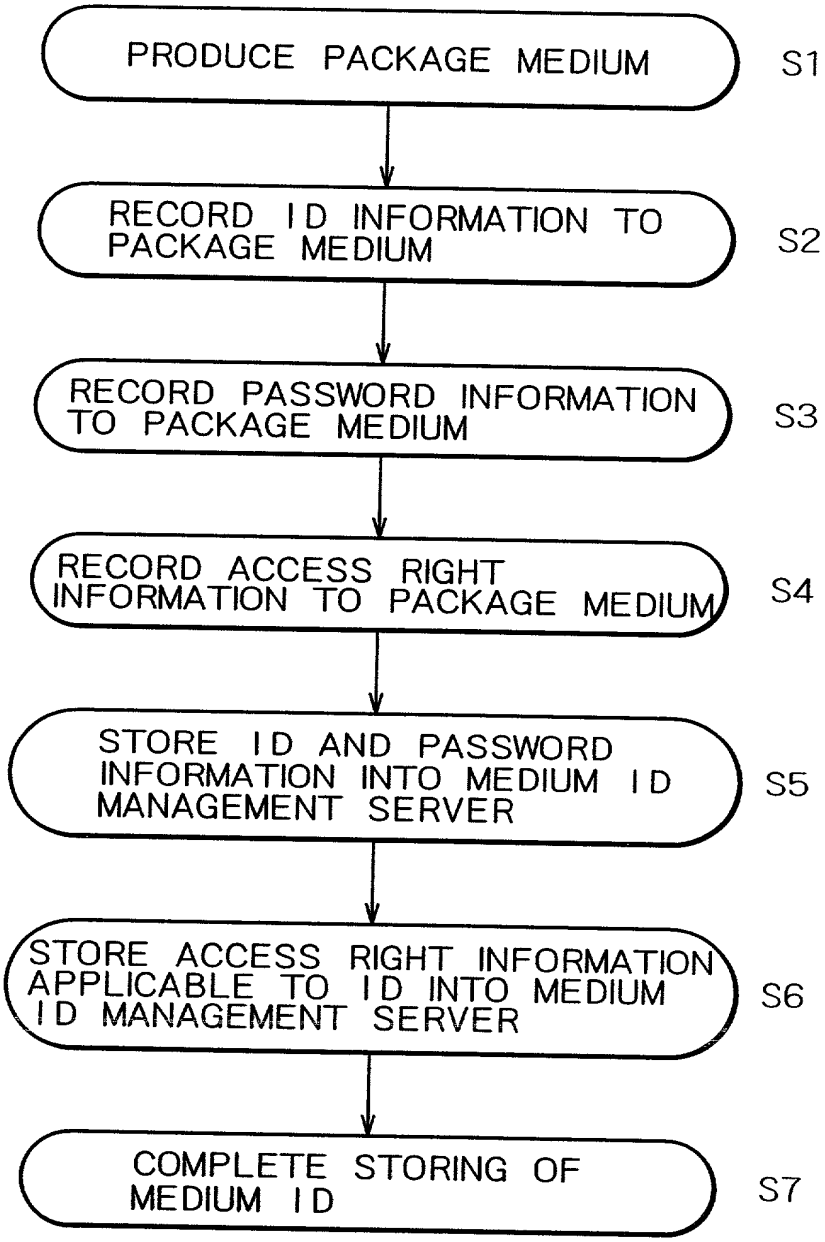


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FIG. 9

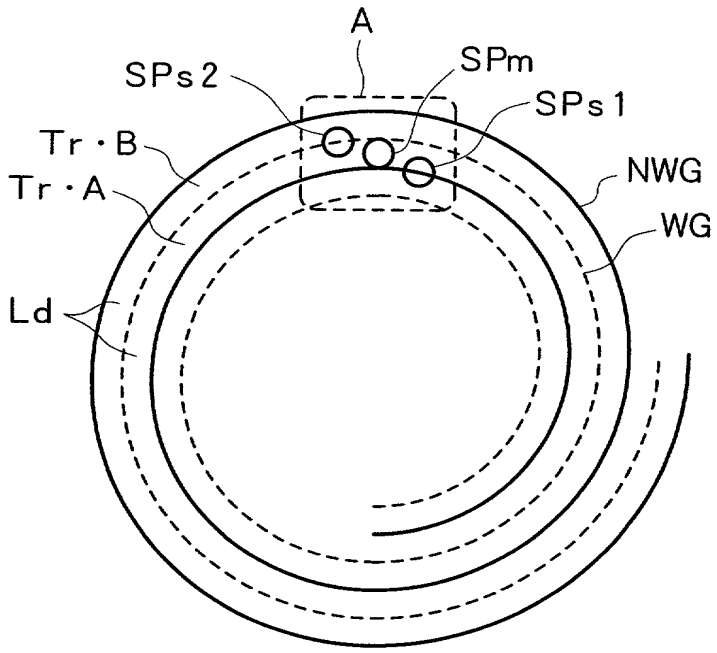

FIG. 10A FIG. 10B

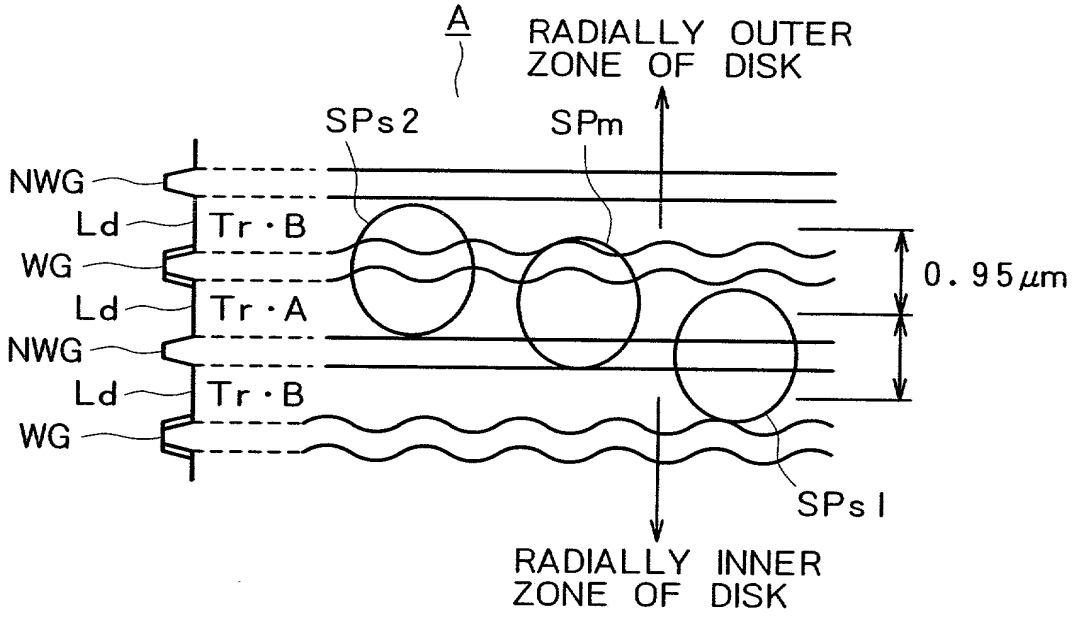

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FIG. 11

	MD-DATA2	MD-DATA1
TRACK PITCH	0.95μm	1.6μm
BIT LENGTH	0.39μm/bit	0.59μm/bit
λ・NA	650nm ・0.52	780nm ・0.45
RECORDING MODE	LAND RECORDING	GROOVE RECORDING
ADDRESS SYSTEM	INTERLACE ADDRESSING (DOUBLE-SPIRAL ONE-SIDE WOBBLE)	SINGLE-SPIRAL TWO-SIDE WOBBLE
MODULATION TECHNIQUE	RLL(1、7)	EFM
ERROR CORRECTING SYSTEM	RS-PC	ACIRC
INTERLEAVE	BLOCK CONTAINED	CONVOLUTION
REDUNDANCY	19.7%	46.3%
LINEAR VELOCITY	2.0m/s	1.2m/s
DATA RATE	589kB/s	133kB/s
STORAGE CAPACITY	650MB	140MB

FIG. 12A

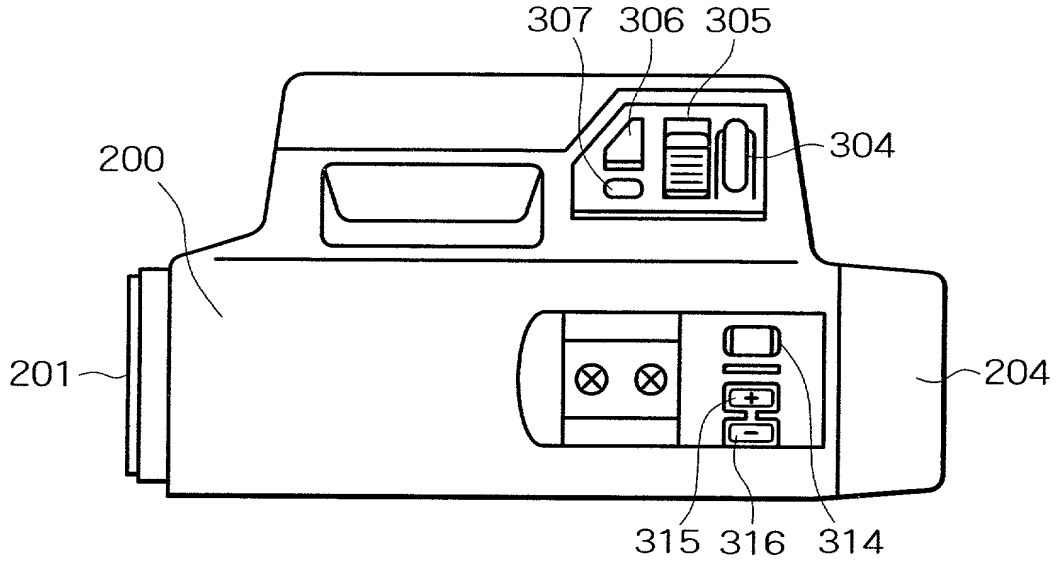


FIG. 12B

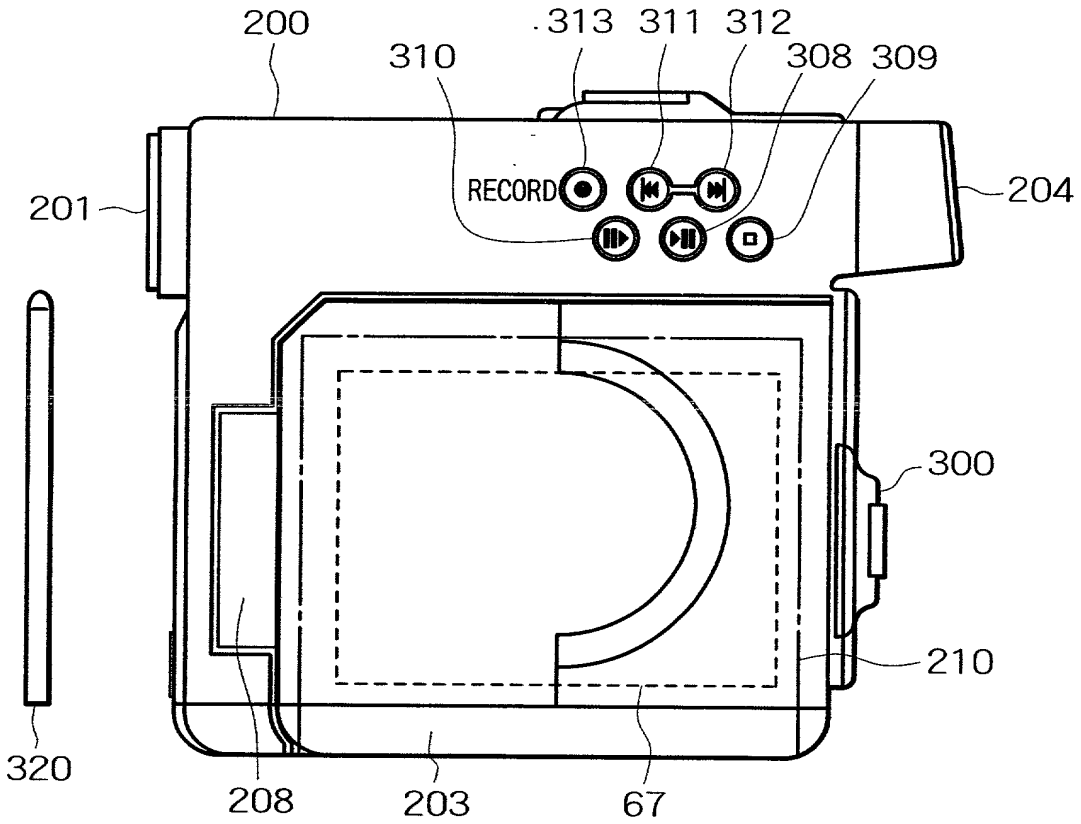


FIG. 13A

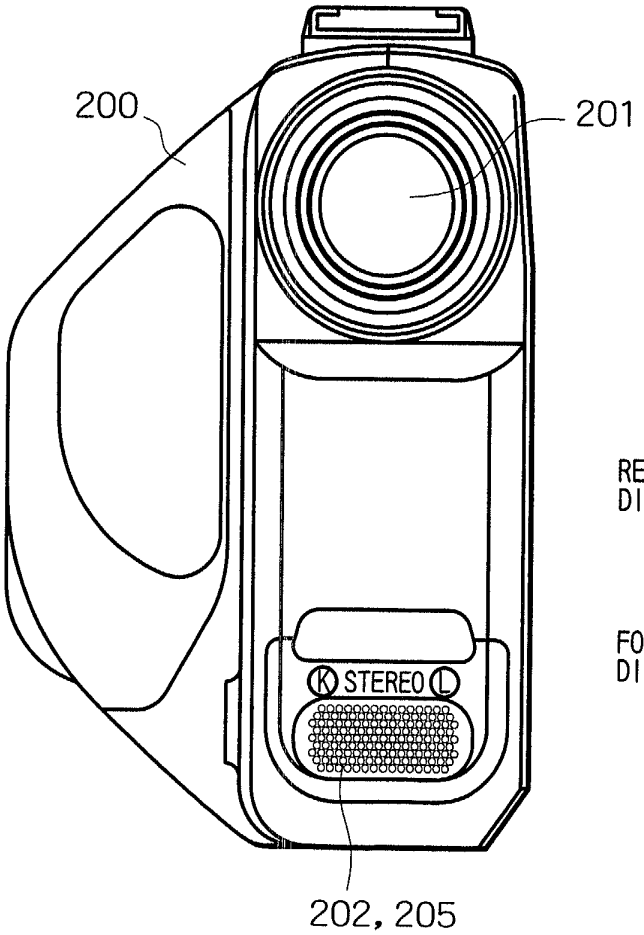


FIG. 13B

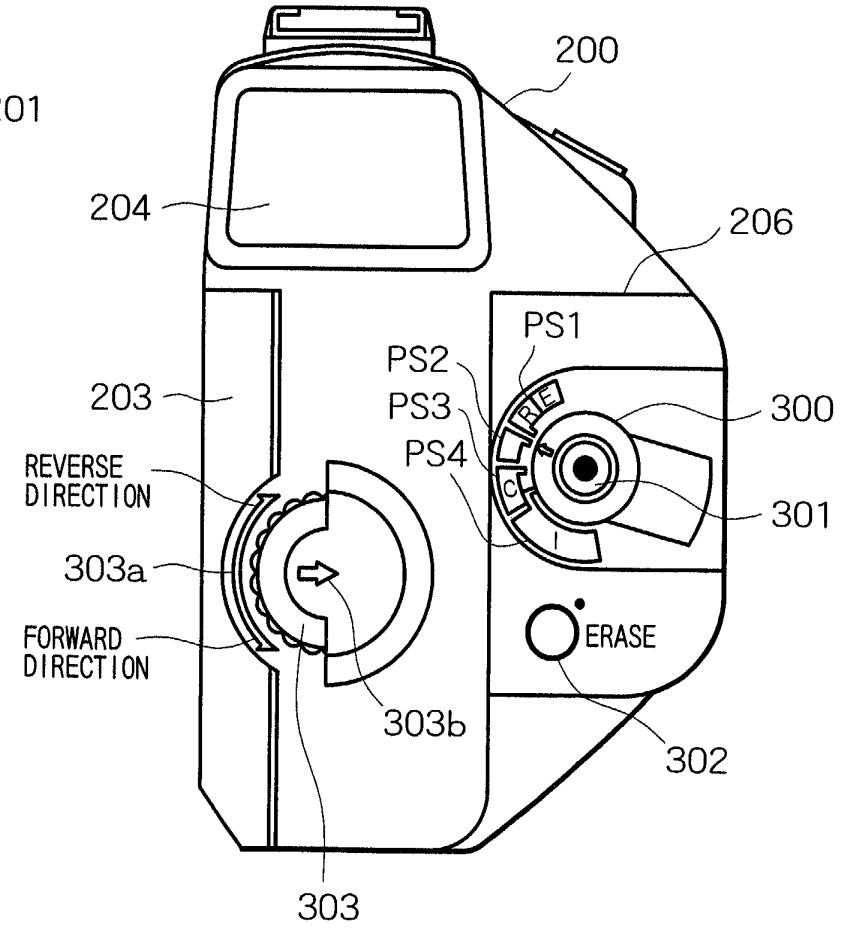


FIG. 14A

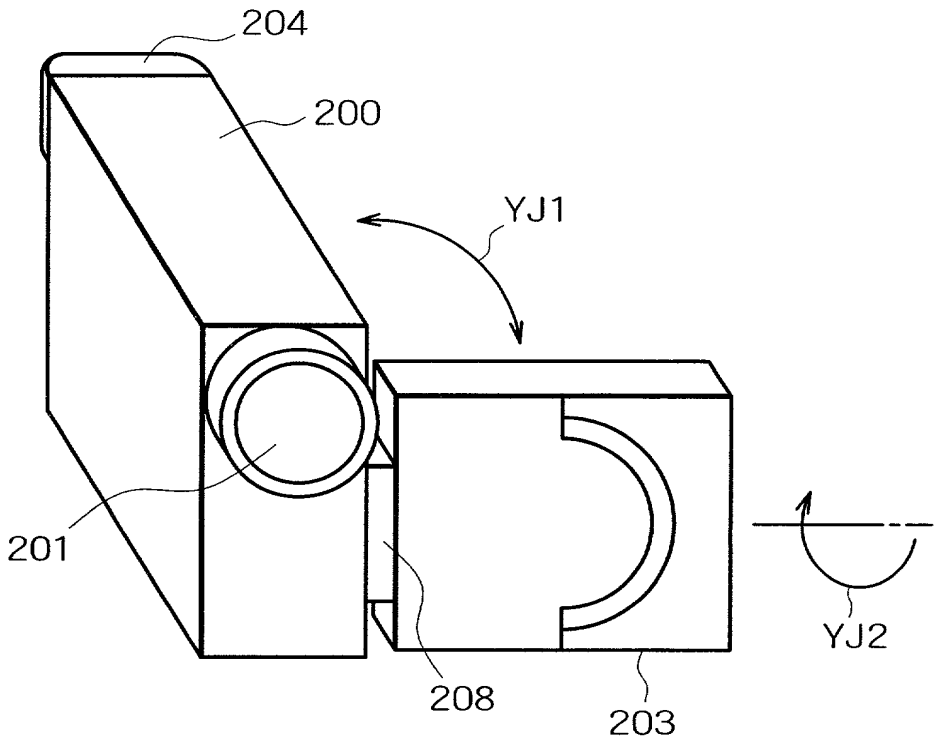


FIG. 14B

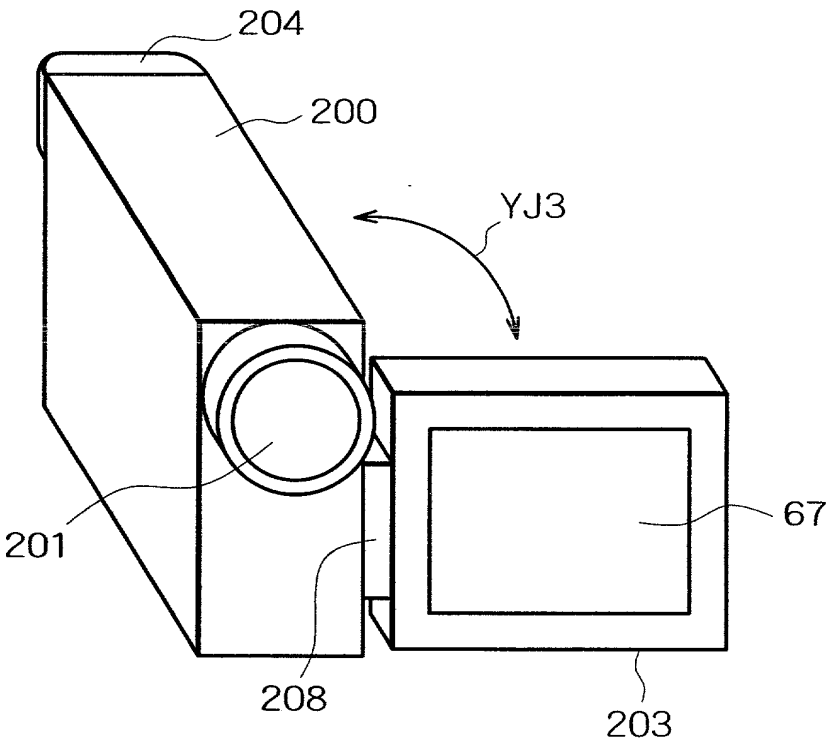


FIG. 15

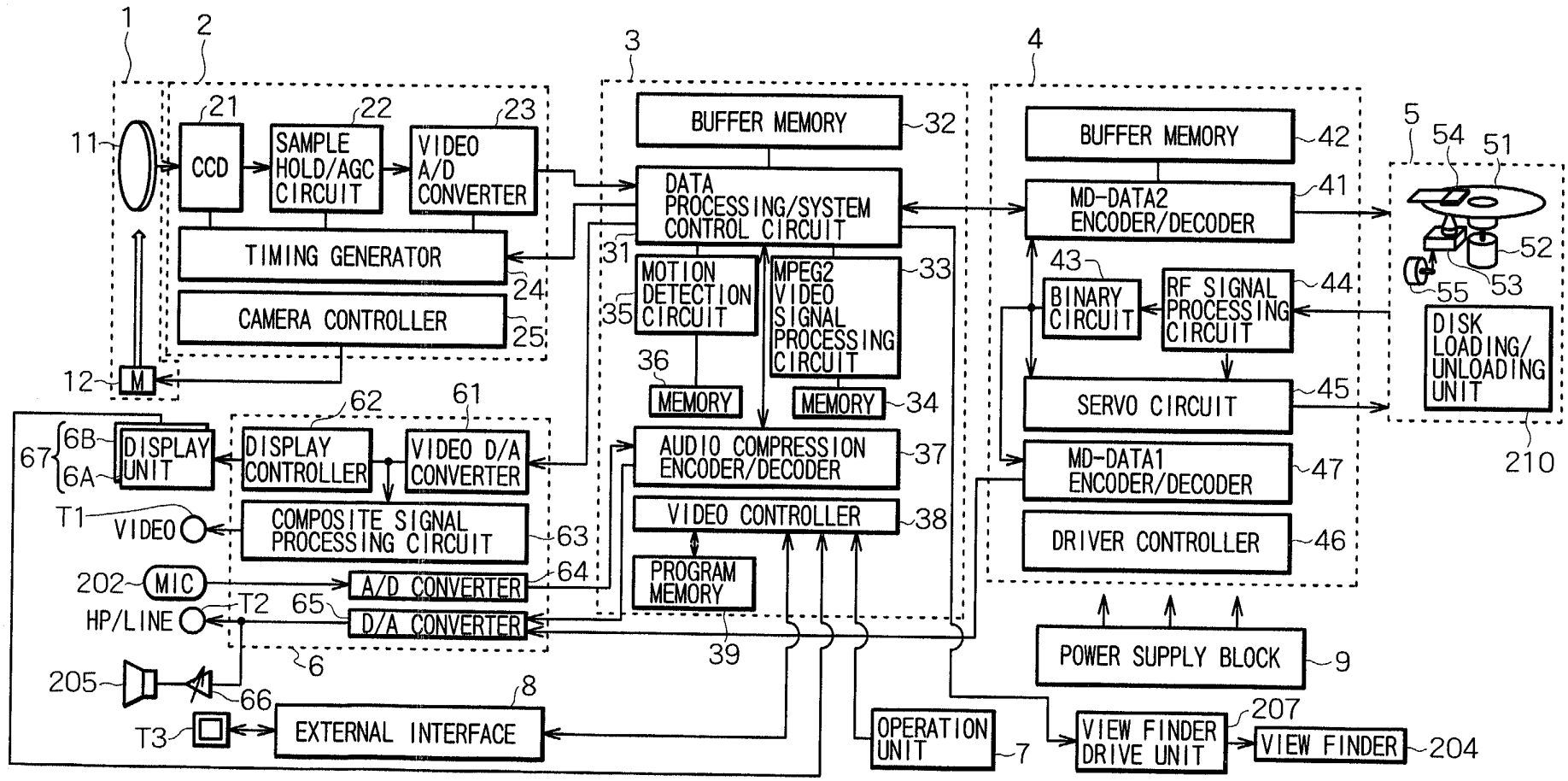

1
2
3
4
5
11
21
CCD
22
SAMPLE HOLD/AGC CIRCUIT
23
VIDEO A/D CONVERTER
TIMING GENERATOR
24
CAMERA CONTROLLER
25
12
M
BUFFER MEMORY
32
DATA PROCESSING/SYSTEM CONTROL CIRCUIT
31
MOTION DETECTION CIRCUIT
35
MPEG2 VIDEO SIGNAL PROCESSING CIRCUIT
33
36
MEMORY
MEMORY
34
AUDIO COMPRESSION ENCODER/DECODER
37
VIDEO CONTROLLER
38
PROGRAM MEMORY
39
BUFFER MEMORY
42
MD-DATA2 ENCODER/DECODER
41
43
BINARY CIRCUIT
RF SIGNAL PROCESSING CIRCUIT
44
SERVO CIRCUIT
45
MD-DATA1 ENCODER/DECODER
47
DRIVER CONTROLLER
46
54
51
52
55
53
DISK LOADING/ UNLOADING UNIT
210
62
61
67
6B
6A
DISPLAY UNIT
DISPLAY CONTROLLER
VIDEO D/A CONVERTER
T1
VIDEO
COMPOSITE SIGNAL PROCESSING CIRCUIT
63
202
MIC
A/D CONVERTER
64
T2
65
HP/LINE
D/A CONVERTER
6
205
66
T3
EXTERNAL INTERFACE
8
POWER SUPPLY BLOCK
9
OPERATION UNIT
7
VIEW FINDER DRIVE UNIT
207
VIEW FINDER
204

FIG. 16

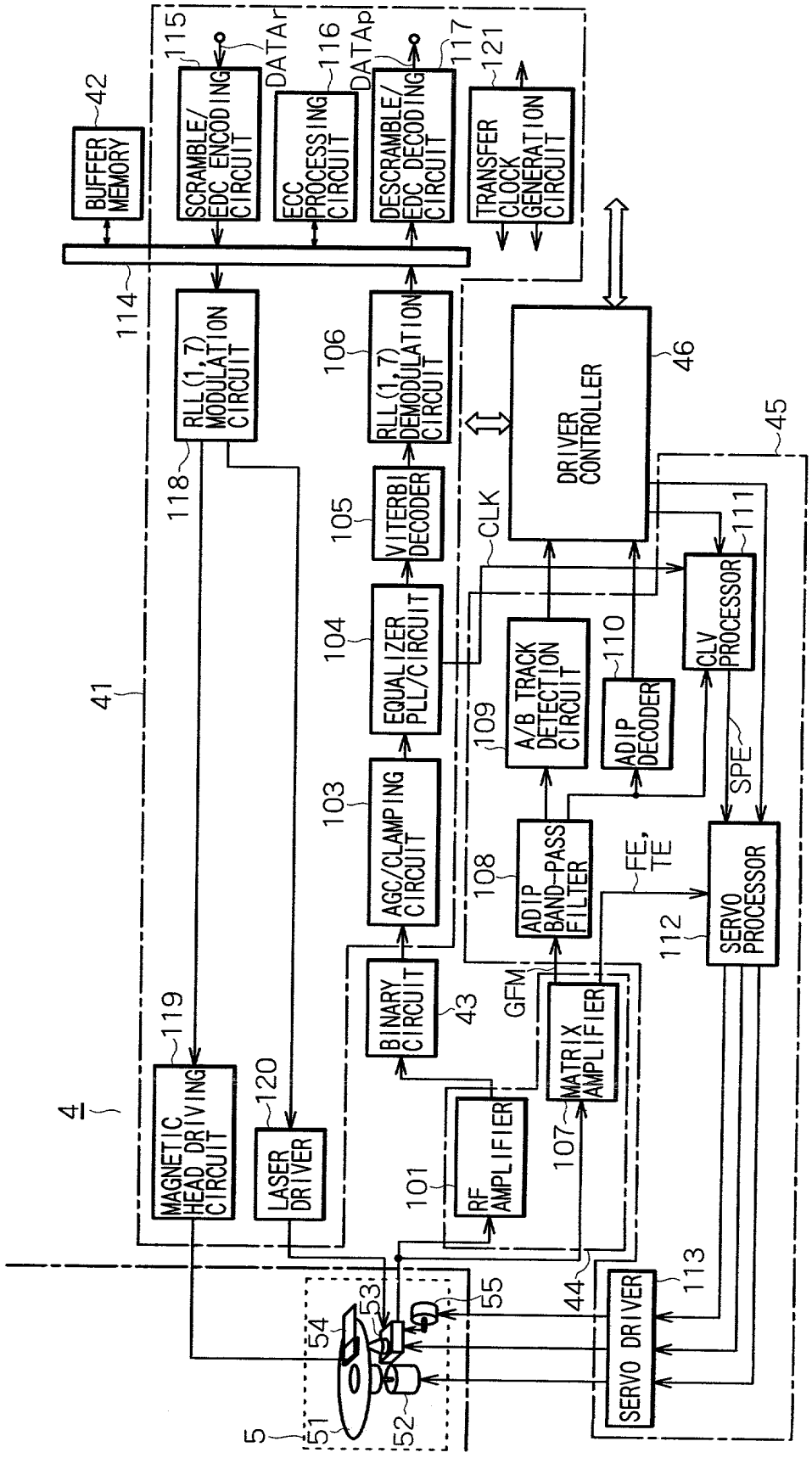

4
5
41
42
BUFFER MEMORY
114
SCRAMBLE/ EDC ENCODING CIRCUIT
115
DATAr
ECC PROCESSING CIRCUIT
116
DATAp
DESCRAMBLE/ EDC DECODING CIRCUIT
117
TRANSFER CLOCK GENERATION CIRCUIT
121
RLL(1,7) MODULATION CIRCUIT
118
RLL(1,7) DEMODULATION CIRCUIT
106
VITERBI DECODER
105
EQUALIZER PLL/CIRCUIT
104
AGC/CLAMPING CIRCUIT
103
BINARY CIRCUIT
43
MAGNETIC HEAD DRIVING CIRCUIT
119
LASER DRIVER
120
RF AMPLIFIER
101
MATRIX AMPLIFIER
107
ADIP BAND-PASS FILTER
108
A/B TRACK DETECTION CIRCUIT
109
ADIP DECODER
110
CLV PROCESSOR
111
SERVO PROCESSOR
112
SERVO DRIVER
113
DRIVER CONTROLLER
46
45
CLK
GFM
FE, TE
SPE
44
55
53
54
51
52

FIG. 17

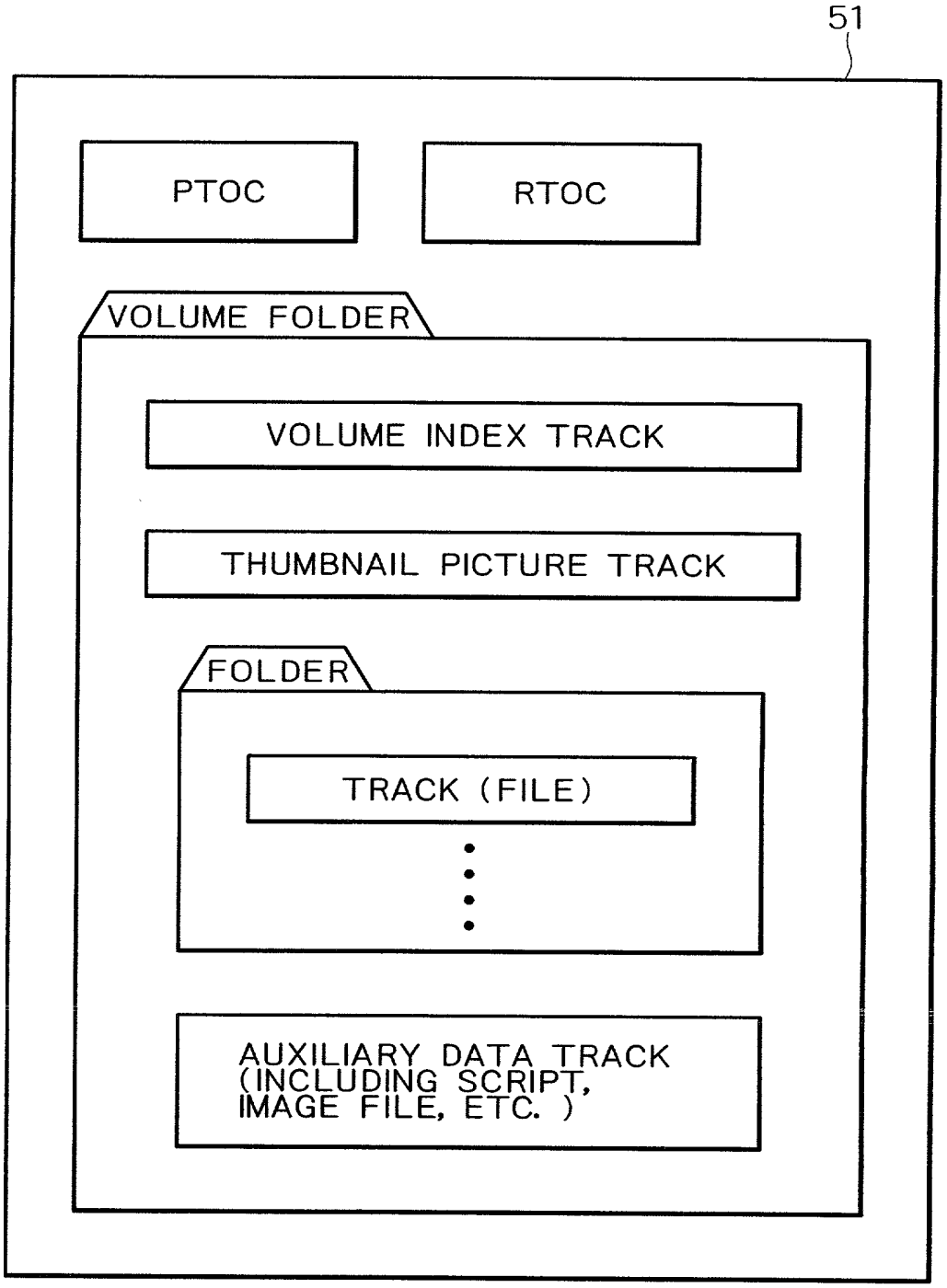
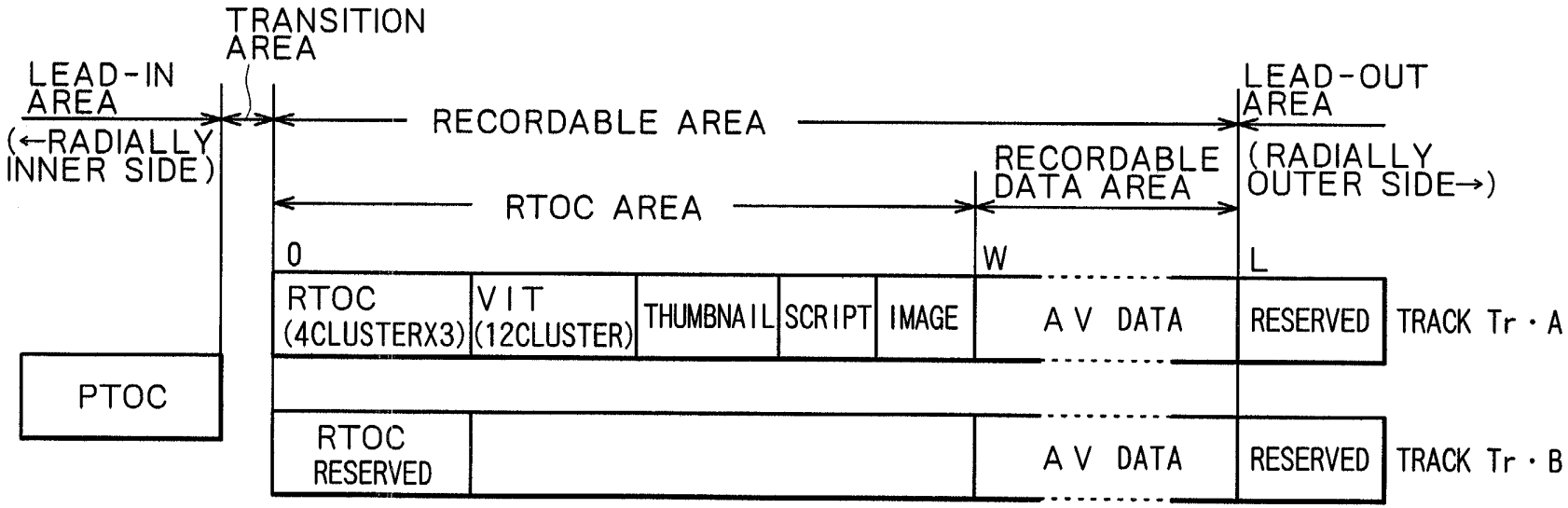

51
PTOC
RTOC
VOLUME FOLDER
VOLUME INDEX TRACK
THUMBNAIL PICTURE TRACK
FOLDER
TRACK (FILE)
AUXILIARY DATA TRACK
(INCLUDING SCRIPT,
IMAGE FILE, ETC.)

FIG. 18



W: RECORDABLE DATA AREA START ADDRESS
L: LEAD-OUT AREA START ADDRESS

FIG.19

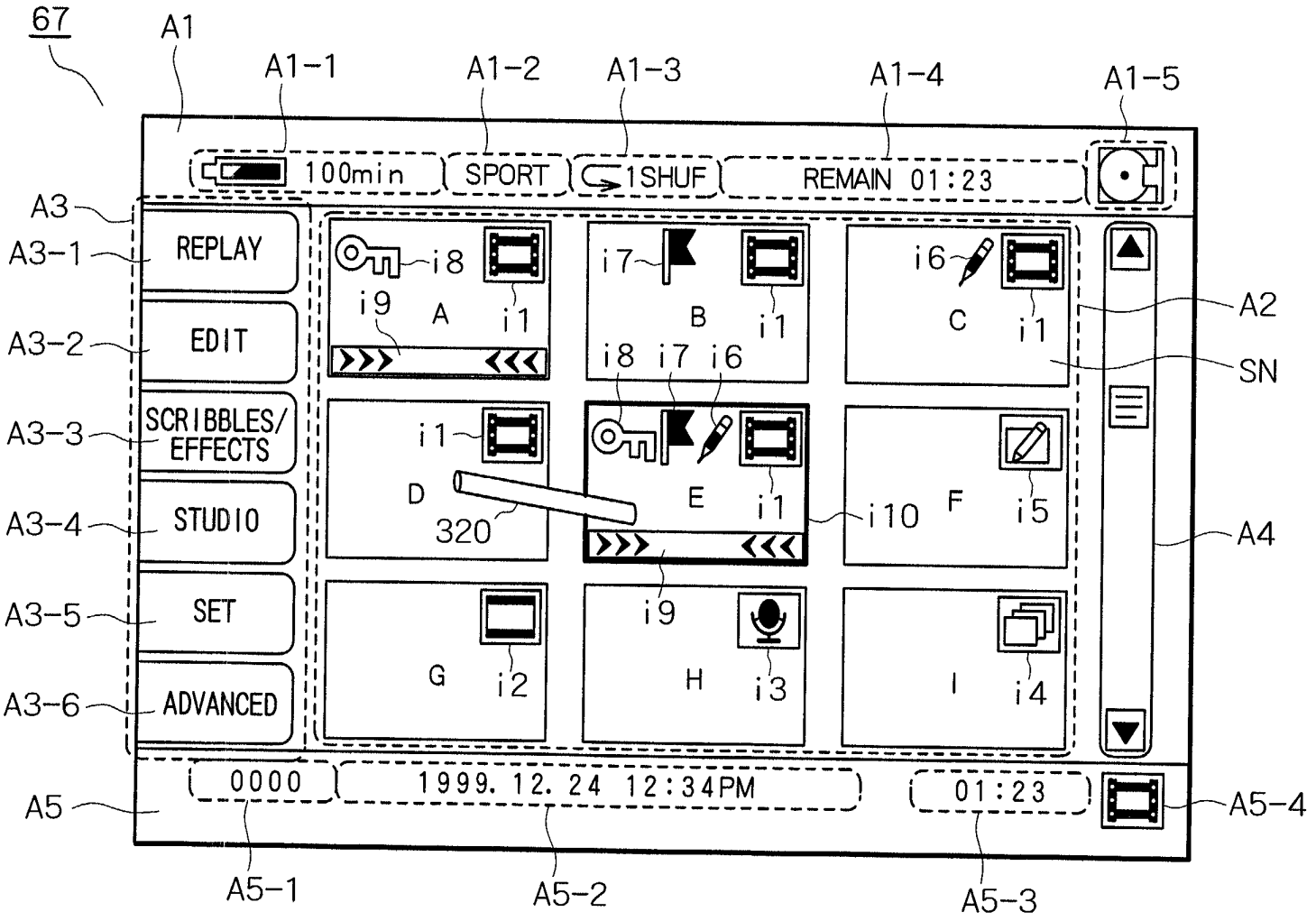

67
A1
A1-1
A1-2
A1-3
A1-4
A1-5
100min
SPORT
1SHUF
REMAIN 01:23
A3
A3-1
REPLAY
A3-2
EDIT
A3-3
SCRIBBLES/ EFFECTS
A3-4
STUDIO
A3-5
SET
A3-6
ADVANCED
i8
i9
A
i1
i7
B
i1
i6
C
i1
A2
SN
i1
D
320
i8 i7 i6
E
i1
i10
F
i5
A4
G
i2
i9
H
i3
I
i4
A5
0000
1999. 12. 24 12:34PM
01:23
A5-4
A5-1
A5-2
A5-3

FIG. 20

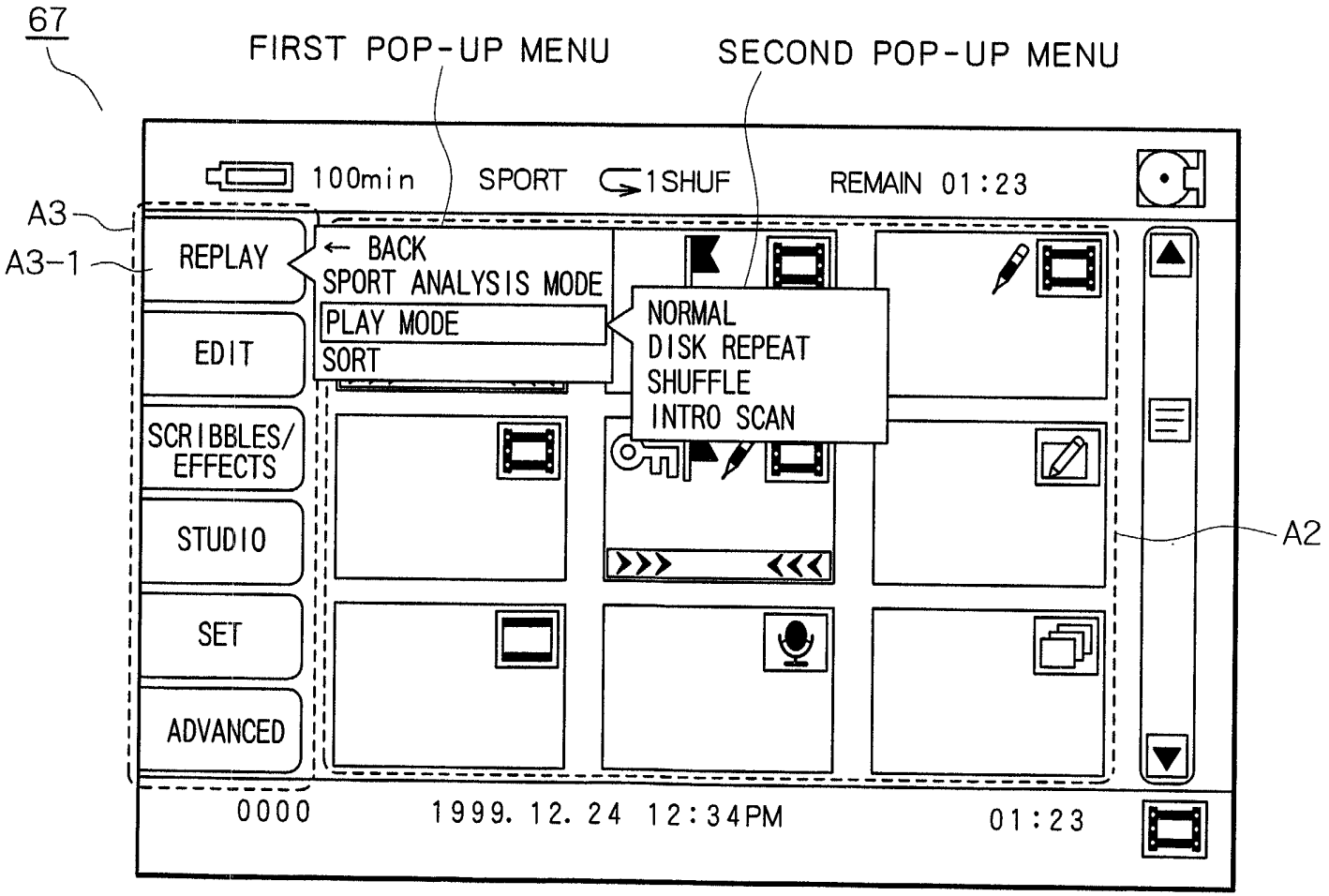

67
FIRST POP-UP MENU
SECOND POP-UP MENU
100min
SPORT
1SHUF
REMAIN 01:23
A3
A3-1
REPLAY
EDIT
SCRIBBLES/
EFFECTS
STUDIO
SET
ADVANCED
← BACK
SPORT ANALYSIS MODE
PLAY MODE
SORT
NORMAL
DISK REPEAT
SHUFFLE
INTRO SCAN
A2
0000
1999. 12. 24 12:34PM
01:23

FIG. 21

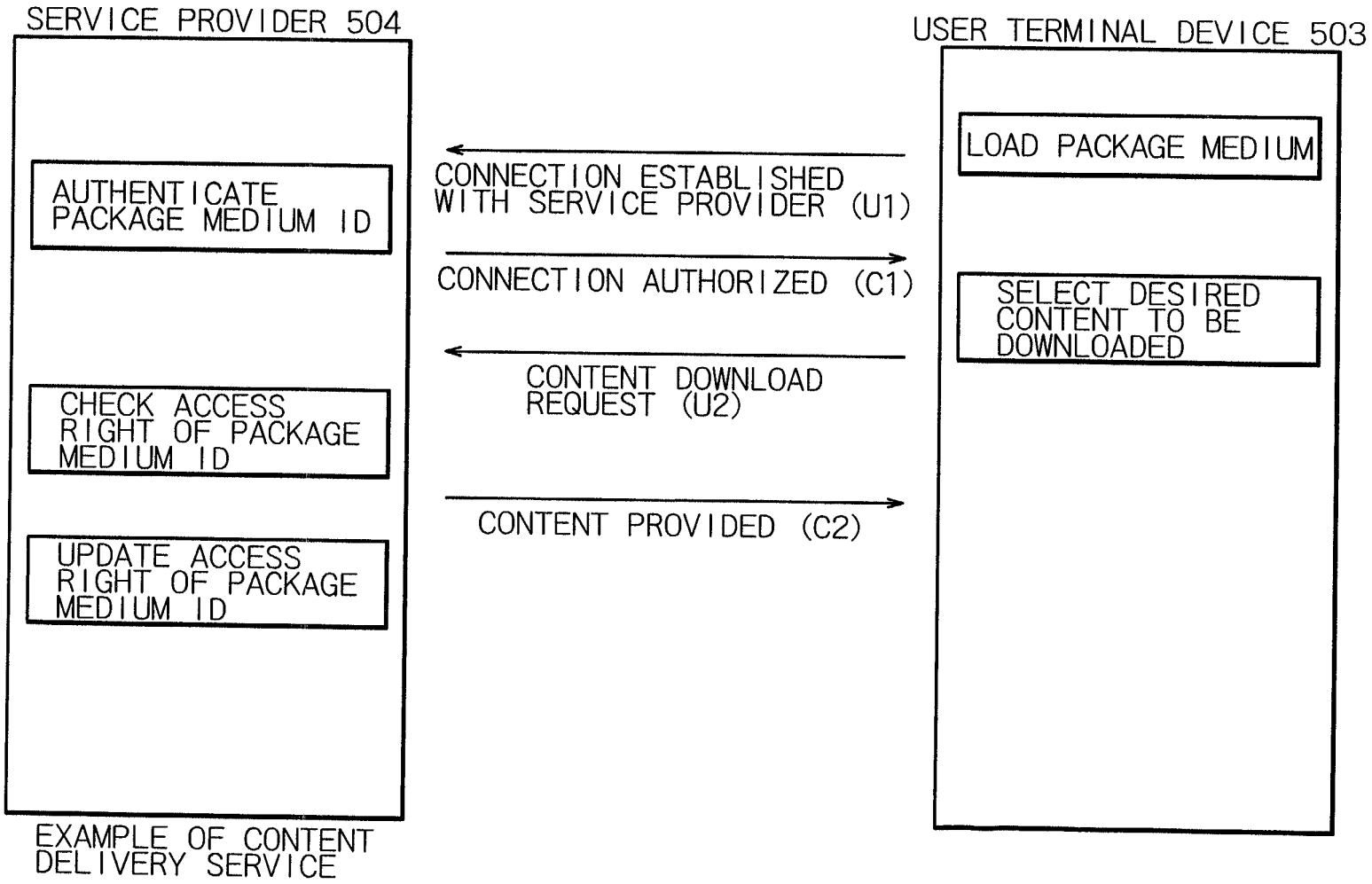

SERVICE PROVIDER 504
USER TERMINAL DEVICE 503
LOAD PACKAGE MEDIUM
CONNECTION ESTABLISHED WITH SERVICE PROVIDER (U1)
AUTHENTICATE PACKAGE MEDIUM ID
CONNECTION AUTHORIZED (C1)
SELECT DESIRED CONTENT TO BE DOWNLOADED
CONTENT DOWNLOAD REQUEST (U2)
CHECK ACCESS RIGHT OF PACKAGE MEDIUM ID
CONTENT PROVIDED (C2)
UPDATE ACCESS RIGHT OF PACKAGE MEDIUM ID
EXAMPLE OF CONTENT DELIVERY SERVICE

FIG. 22

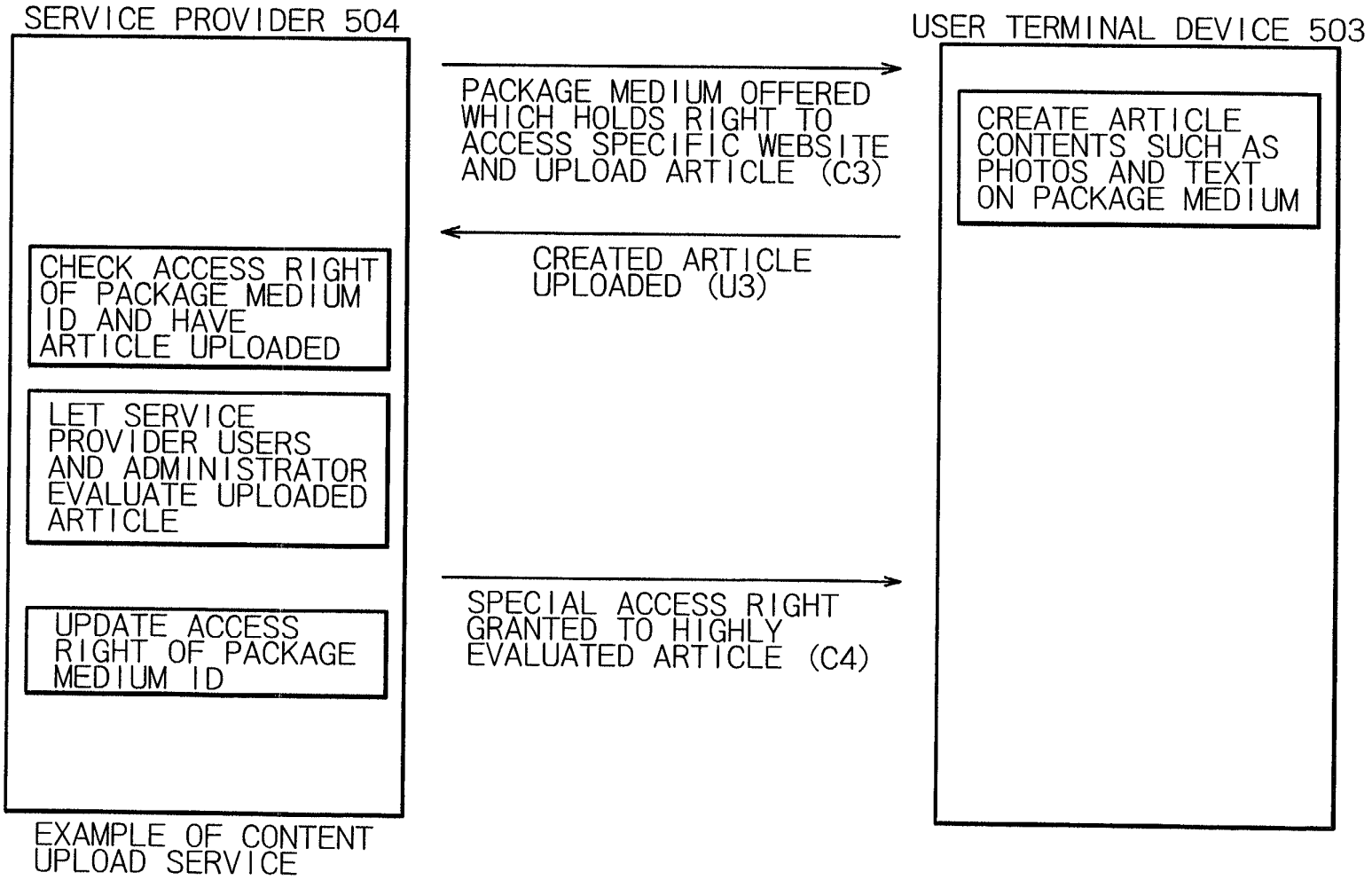

SERVICE PROVIDER 504
USER TERMINAL DEVICE 503
PACKAGE MEDIUM OFFERED WHICH HOLDS RIGHT TO ACCESS SPECIFIC WEBSITE AND UPLOAD ARTICLE (C3)
CREATE ARTICLE CONTENTS SUCH AS PHOTOS AND TEXT ON PACKAGE MEDIUM
CREATED ARTICLE UPLOADED (U3)
CHECK ACCESS RIGHT OF PACKAGE MEDIUM ID AND HAVE ARTICLE UPLOADED
LET SERVICE PROVIDER USERS AND ADMINISTRATOR EVALUATE UPLOADED ARTICLE
SPECIAL ACCESS RIGHT GRANTED TO HIGHLY EVALUATED ARTICLE (C4)
UPDATE ACCESS RIGHT OF PACKAGE MEDIUM ID
EXAMPLE OF CONTENT UPLOAD SERVICE

FIG. 23

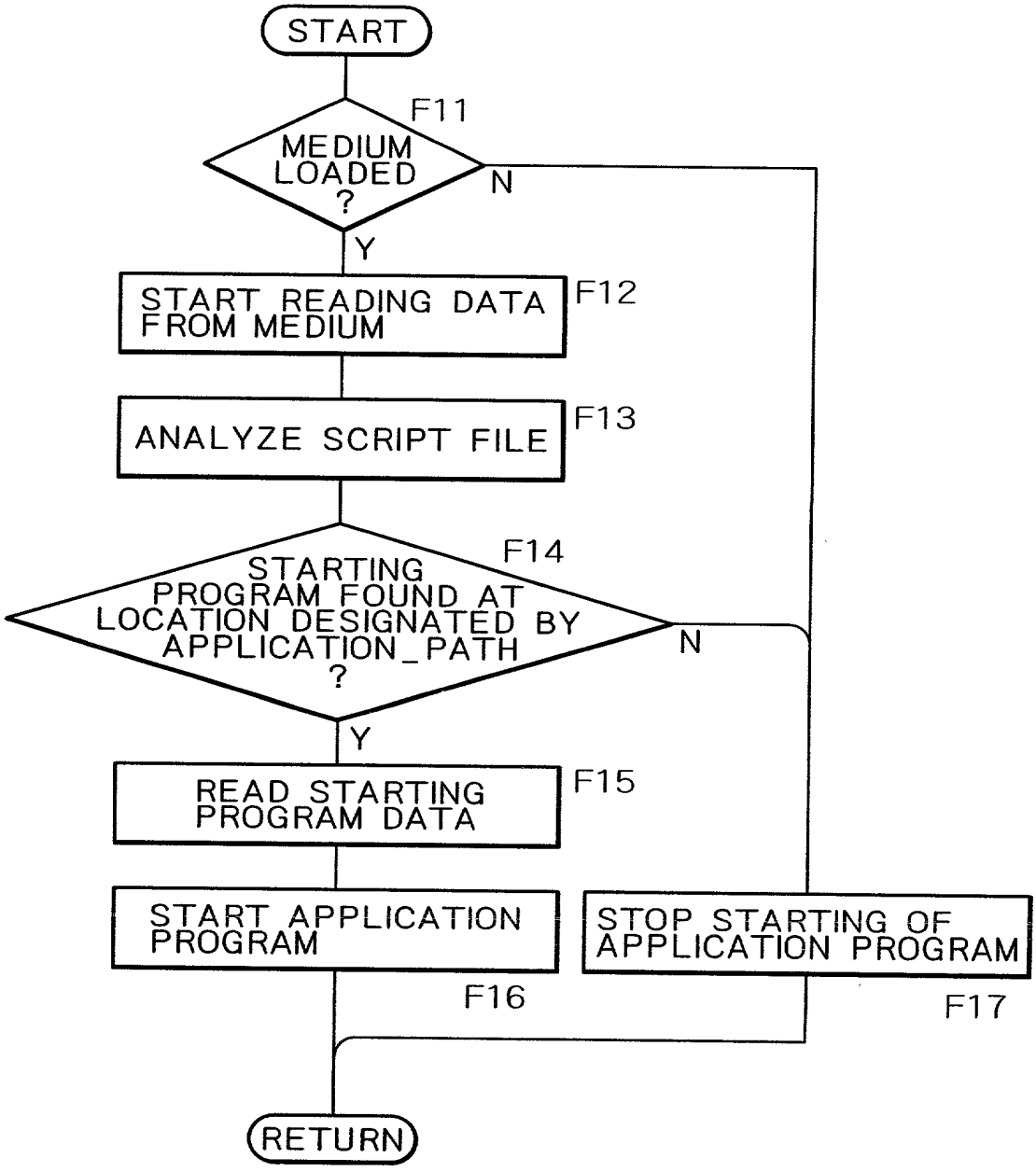

START
F11
MEDIUM LOADED ?
N
Y
START READING DATA FROM MEDIUM
F12
ANALYZE SCRIPT FILE
F13
F14
STARTING PROGRAM FOUND AT LOCATION DESIGNATED BY APPLICATION_PATH ?
N
Y
READ STARTING PROGRAM DATA
F15
START APPLICATION PROGRAM
F16
STOP STARTING OF APPLICATION PROGRAM
F17
RETURN

FIG. 24

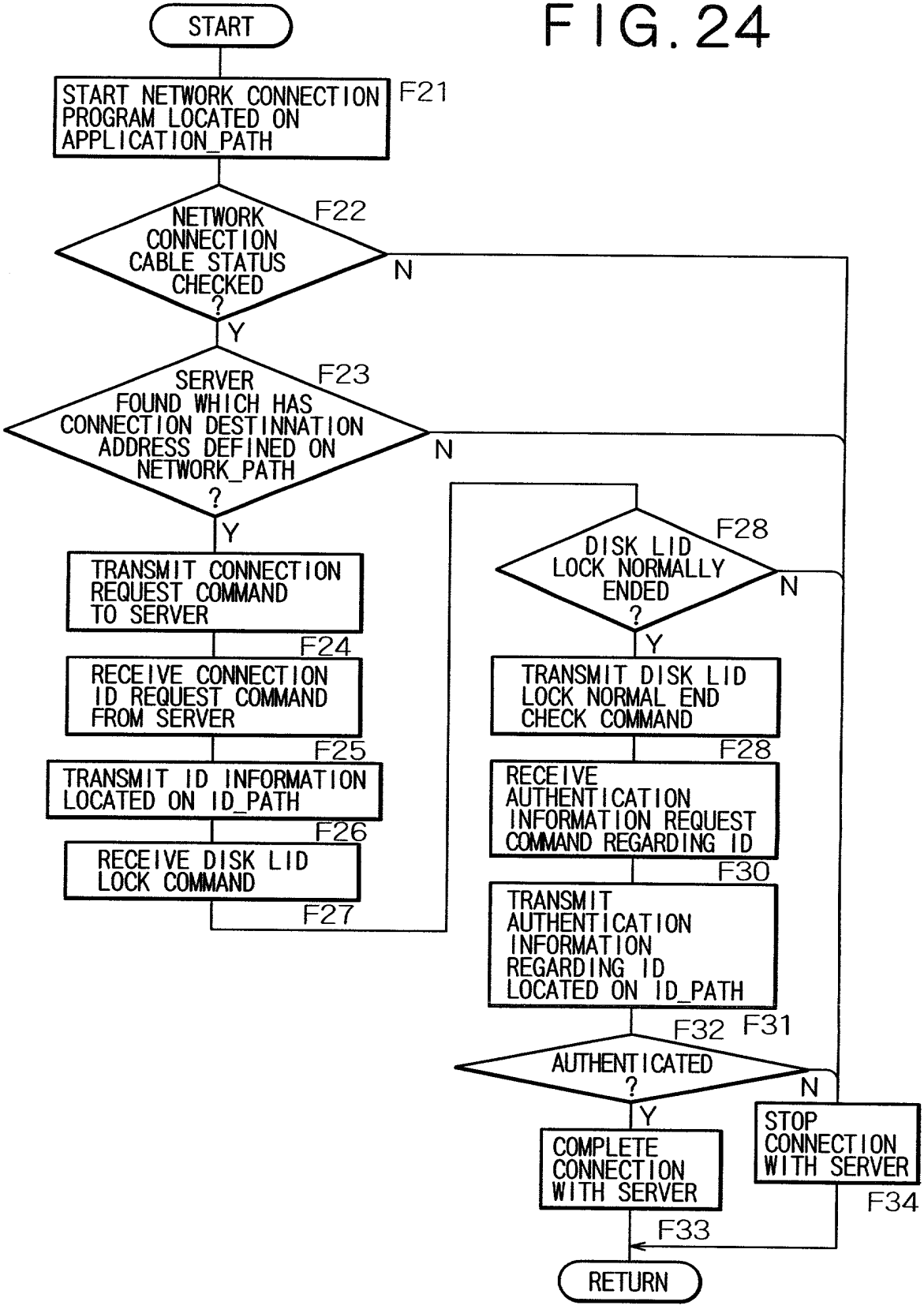

START
START NETWORK CONNECTION PROGRAM LOCATED ON APPLICATION_PATH
F21
NETWORK CONNECTION CABLE STATUS CHECKED ?
F22
N
Y
SERVER FOUND WHICH HAS CONNECTION DESTINNATION ADDRESS DEFINED ON NETWORK_PATH ?
F23
N
Y
TRANSMIT CONNECTION REQUEST COMMAND TO SERVER
F24
RECEIVE CONNECTION ID REQUEST COMMAND FROM SERVER
F25
TRANSMIT ID INFORMATION LOCATED ON ID_PATH
F26
RECEIVE DISK LID LOCK COMMAND
F27
DISK LID LOCK NORMALLY ENDED ?
F28
N
Y
TRANSMIT DISK LID LOCK NORMAL END CHECK COMMAND
F28
RECEIVE AUTHENTICATION INFORMATION REQUEST COMMAND REGARDING ID
F30
TRANSMIT AUTHENTICATION INFORMATION REGARDING ID LOCATED ON ID_PATH
F32
F31
AUTHENTICATED ?
N
Y
STOP CONNECTION WITH SERVER
F34
COMPLETE CONNECTION WITH SERVER
F33
RETURN

FIG. 25

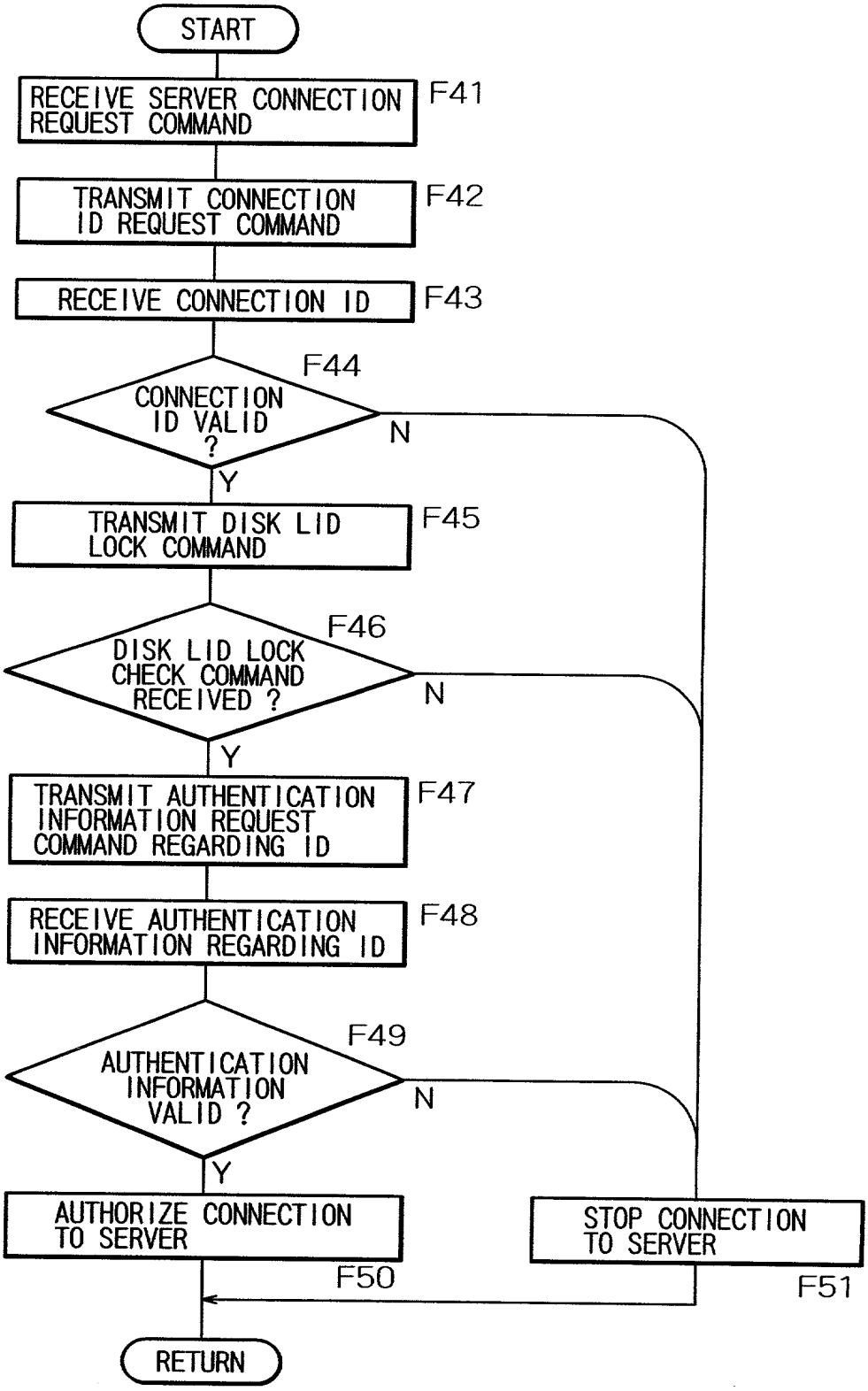

START
RECEIVE SERVER CONNECTION REQUEST COMMAND
F41
TRANSMIT CONNECTION ID REQUEST COMMAND
F42
RECEIVE CONNECTION ID
F43
F44
CONNECTION ID VALID ?
N
Y
TRANSMIT DISK LID LOCK COMMAND
F45
F46
DISK LID LOCK CHECK COMMAND RECEIVED ?
N
Y
TRANSMIT AUTHENTICATION INFORMATION REQUEST COMMAND REGARDING ID
F47
RECEIVE AUTHENTICATION INFORMATION REGARDING ID
F48
F49
AUTHENTICATION INFORMATION VALID ?
N
Y
AUTHORIZE CONNECTION TO SERVER
F50
STOP CONNECTION TO SERVER
F51
RETURN

FIG. 26

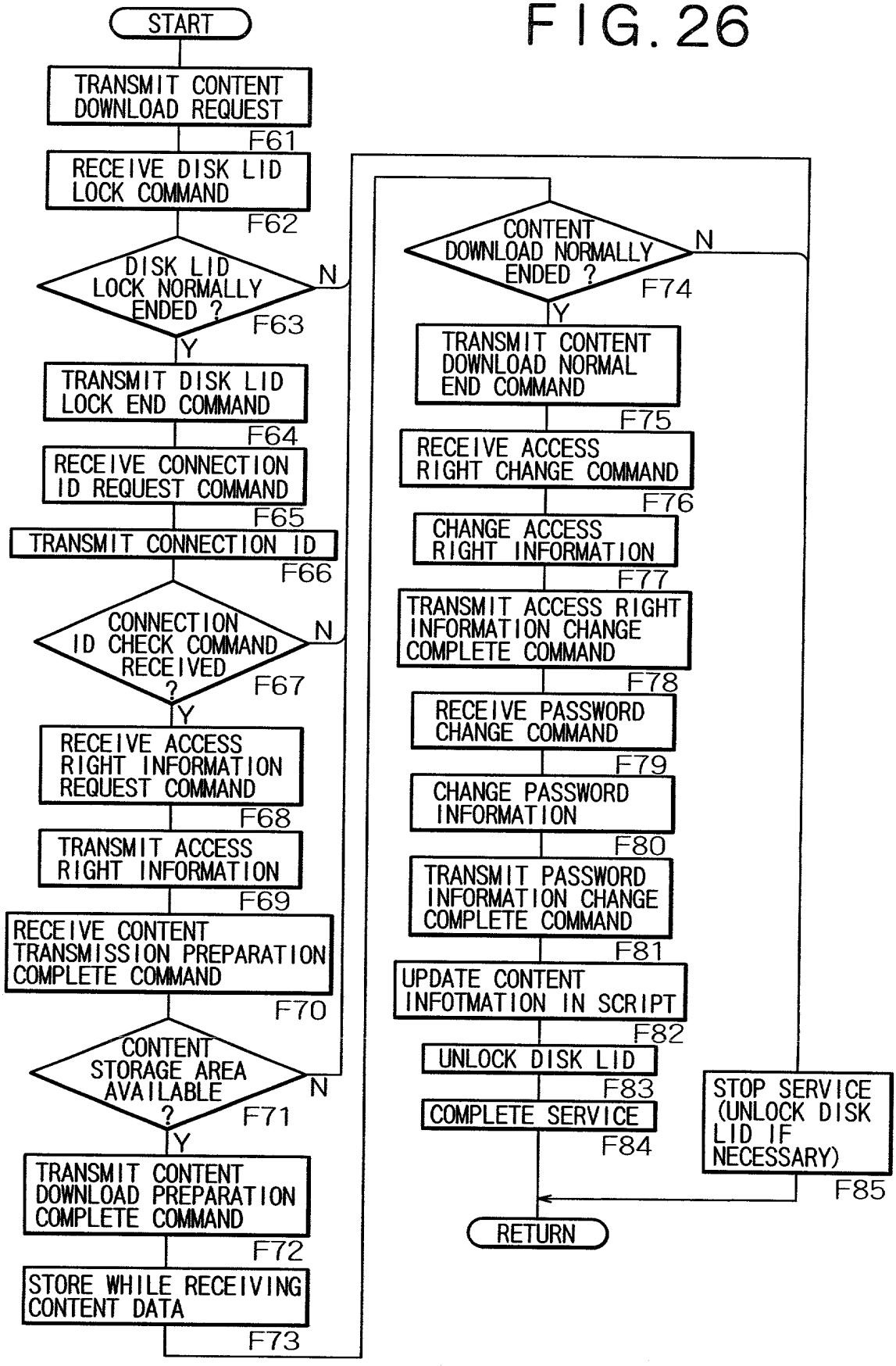

START
TRANSMIT CONTENT DOWNLOAD REQUEST
F61
RECEIVE DISK LID LOCK COMMAND
F62
DISK LID LOCK NORMALLY ENDED ?
F63
N
Y
TRANSMIT DISK LID LOCK END COMMAND
F64
RECEIVE CONNECTION ID REQUEST COMMAND
F65
TRANSMIT CONNECTION ID
F66
CONNECTION ID CHECK COMMAND RECEIVED ?
F67
N
Y
RECEIVE ACCESS RIGHT INFORMATION REQUEST COMMAND
F68
TRANSMIT ACCESS RIGHT INFORMATION
F69
RECEIVE CONTENT TRANSMISSION PREPARATION COMPLETE COMMAND
F70
CONTENT STORAGE AREA AVAILABLE ?
F71
N
Y
TRANSMIT CONTENT DOWNLOAD PREPARATION COMPLETE COMMAND
F72
STORE WHILE RECEIVING CONTENT DATA
F73
CONTENT DOWNLOAD NORMALLY ENDED ?
F74
N
Y
TRANSMIT CONTENT DOWNLOAD NORMAL END COMMAND
F75
RECEIVE ACCESS RIGHT CHANGE COMMAND
F76
CHANGE ACCESS RIGHT INFORMATION
F77
TRANSMIT ACCESS RIGHT INFORMATION CHANGE COMPLETE COMMAND
F78
RECEIVE PASSWORD CHANGE COMMAND
F79
CHANGE PASSWORD INFORMATION
F80
TRANSMIT PASSWORD INFORMATION CHANGE COMPLETE COMMAND
F81
UPDATE CONTENT INFOTMATION IN SCRIPT
F82
UNLOCK DISK LID
F83
COMPLETE SERVICE
F84
STOP SERVICE (UNLOCK DISK LID IF NECESSARY)
F85
RETURN

FIG. 27

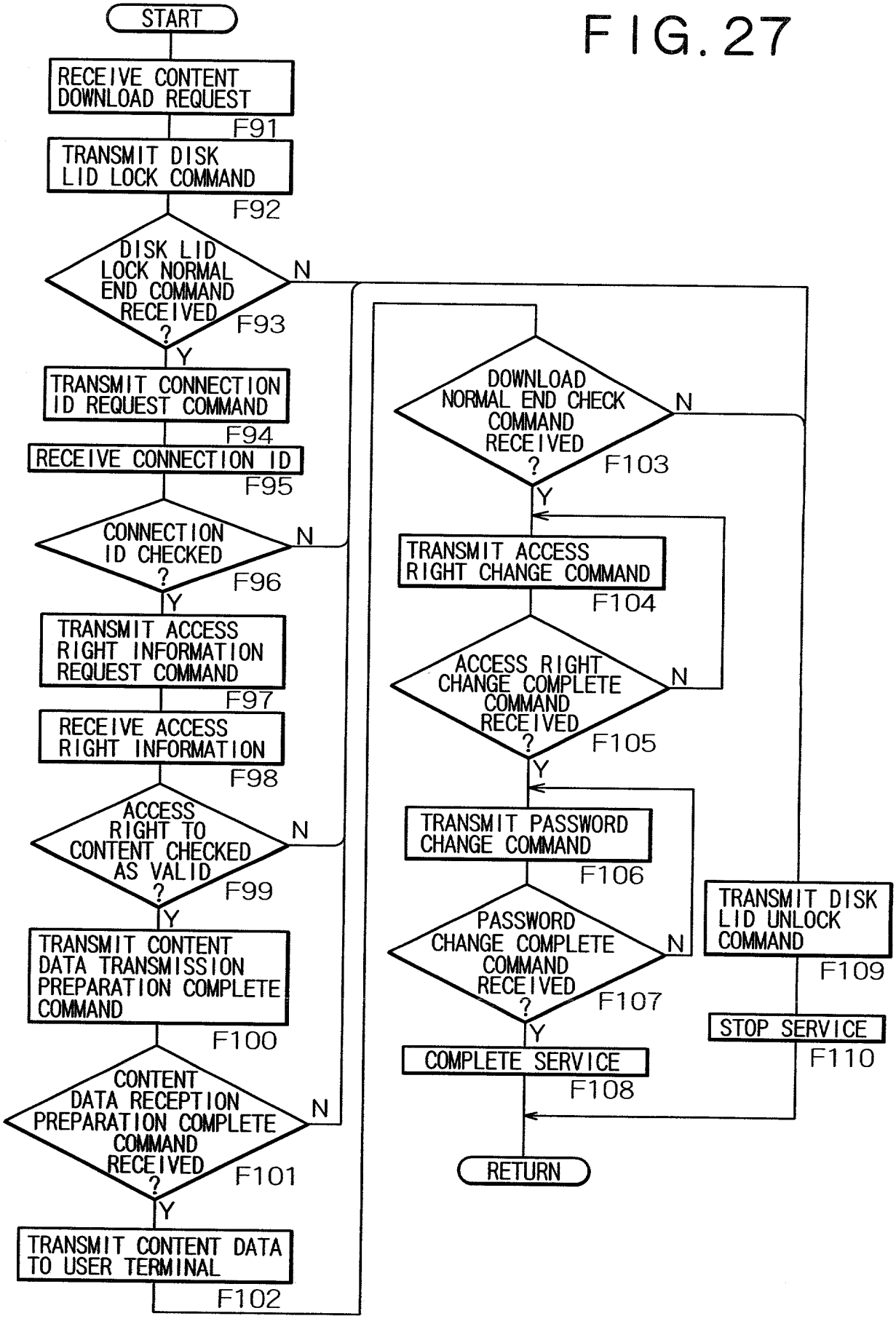


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FIG. 28

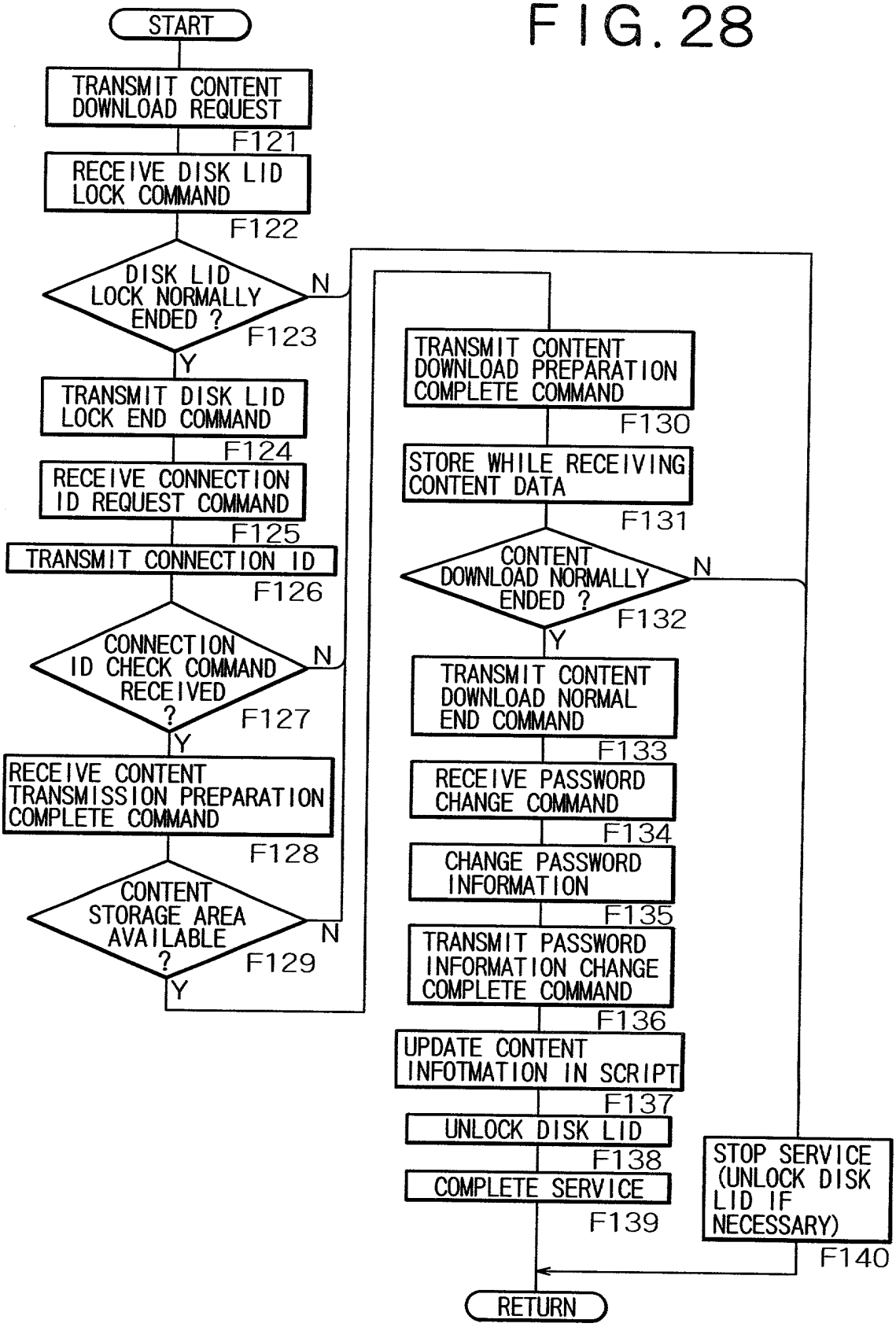
START
TRANSMIT CONTENT DOWNLOAD REQUEST
F121
RECEIVE DISK LID LOCK COMMAND
F122
DISK LID LOCK NORMALLY ENDED ?
F123
N
Y
TRANSMIT DISK LID LOCK END COMMAND
F124
RECEIVE CONNECTION ID REQUEST COMMAND
F125
TRANSMIT CONNECTION ID
F126
CONNECTION ID CHECK COMMAND RECEIVED ?
F127
N
Y
RECEIVE CONTENT TRANSMISSION PREPARATION COMPLETE COMMAND
F128
CONTENT STORAGE AREA AVAILABLE ?
F129
N
Y
TRANSMIT CONTENT DOWNLOAD PREPARATION COMPLETE COMMAND
F130
STORE WHILE RECEIVING CONTENT DATA
F131
CONTENT DOWNLOAD NORMALLY ENDED ?
F132
N
Y
TRANSMIT CONTENT DOWNLOAD NORMAL END COMMAND
F133
RECEIVE PASSWORD CHANGE COMMAND
F134
CHANGE PASSWORD INFORMATION
F135
TRANSMIT PASSWORD INFORMATION CHANGE COMPLETE COMMAND
F136
UPDATE CONTENT INFOTMATION IN SCRIPT
F137
UNLOCK DISK LID
F138
COMPLETE SERVICE
F139
STOP SERVICE (UNLOCK DISK LID IF NECESSARY)
F140
RETURN

FIG. 29

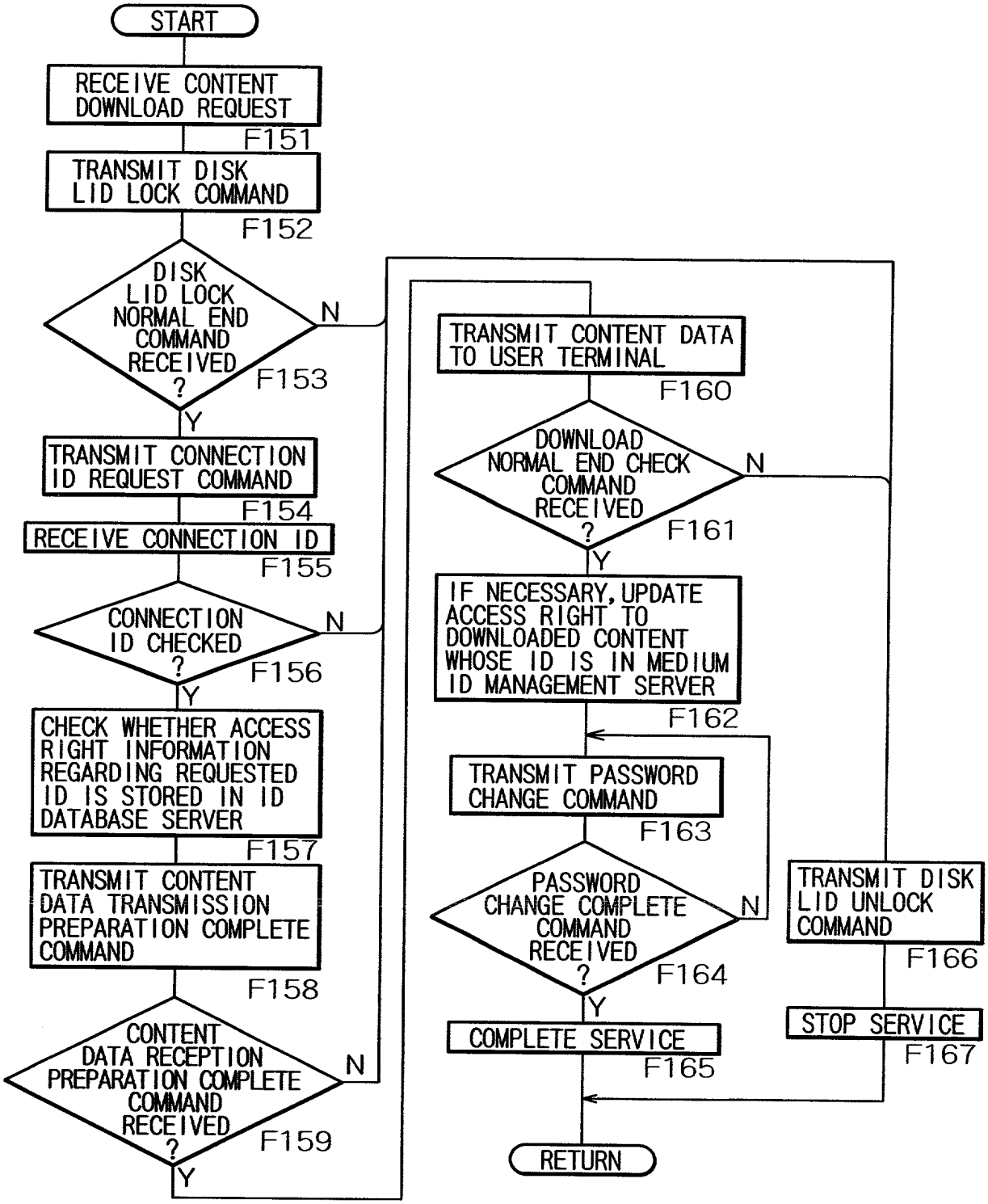
START
RECEIVE CONTENT DOWNLOAD REQUEST
F151
TRANSMIT DISK LID LOCK COMMAND
F152
DISK LID LOCK NORMAL END COMMAND RECEIVED ?
F153
N
Y
TRANSMIT CONNECTION ID REQUEST COMMAND
F154
RECEIVE CONNECTION ID
F155
CONNECTION ID CHECKED ?
F156
N
Y
CHECK WHETHER ACCESS RIGHT INFORMATION REGARDING REQUESTED ID IS STORED IN ID DATABASE SERVER
F157
TRANSMIT CONTENT DATA TRANSMISSION PREPARATION COMPLETE COMMAND
F158
CONTENT DATA RECEPTION PREPARATION COMPLETE COMMAND RECEIVED ?
F159
N
Y
TRANSMIT CONTENT DATA TO USER TERMINAL
F160
DOWNLOAD NORMAL END CHECK COMMAND RECEIVED ?
F161
N
Y
IF NECESSARY, UPDATE ACCESS RIGHT TO DOWNLOADED CONTENT WHOSE ID IS IN MEDIUM ID MANAGEMENT SERVER
F162
TRANSMIT PASSWORD CHANGE COMMAND
F163
PASSWORD CHANGE COMPLETE COMMAND RECEIVED ?
F164
N
Y
COMPLETE SERVICE
F165
TRANSMIT DISK LID UNLOCK COMMAND
F166
STOP SERVICE
F167
RETURN

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FIG. 30

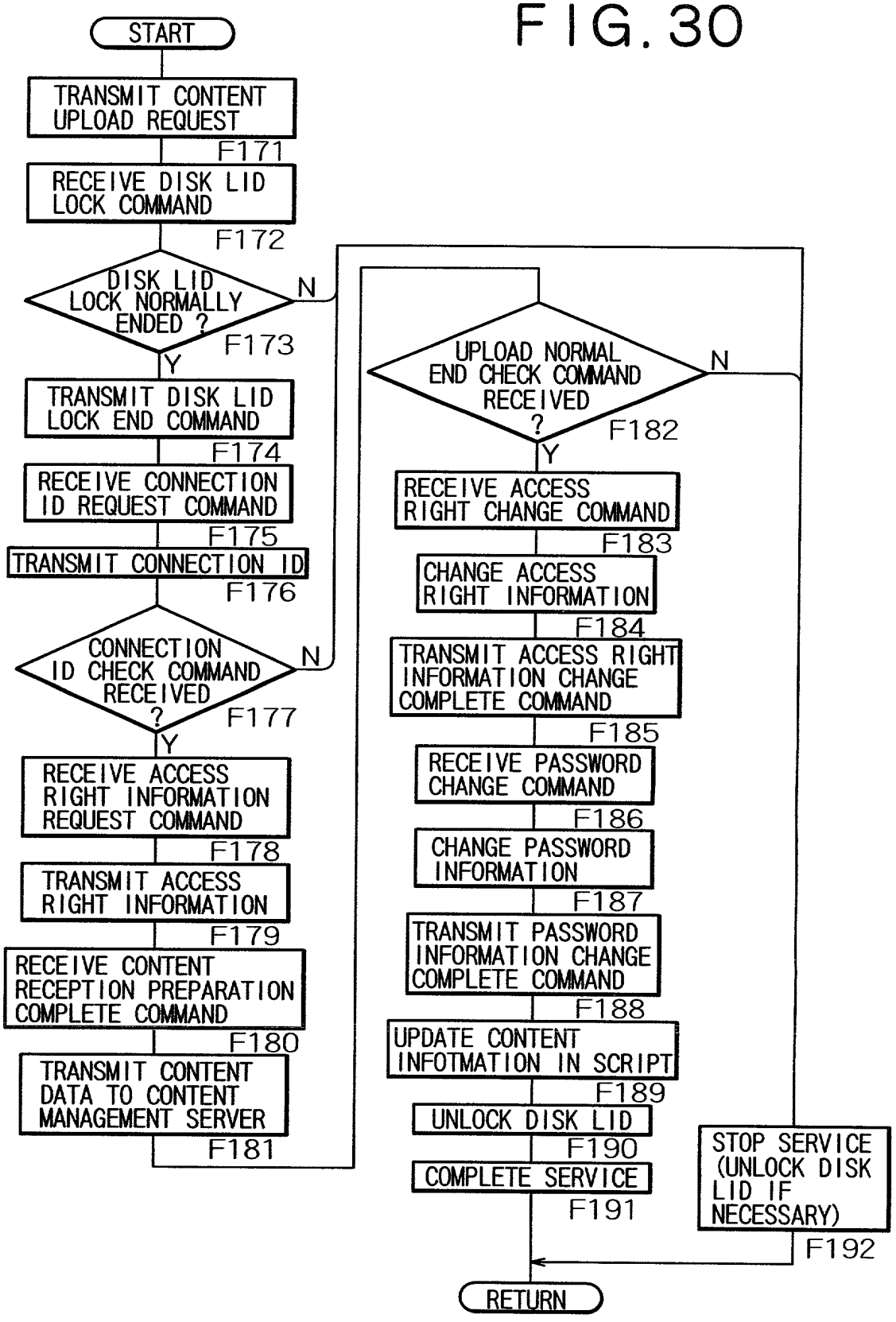


FIG. 31

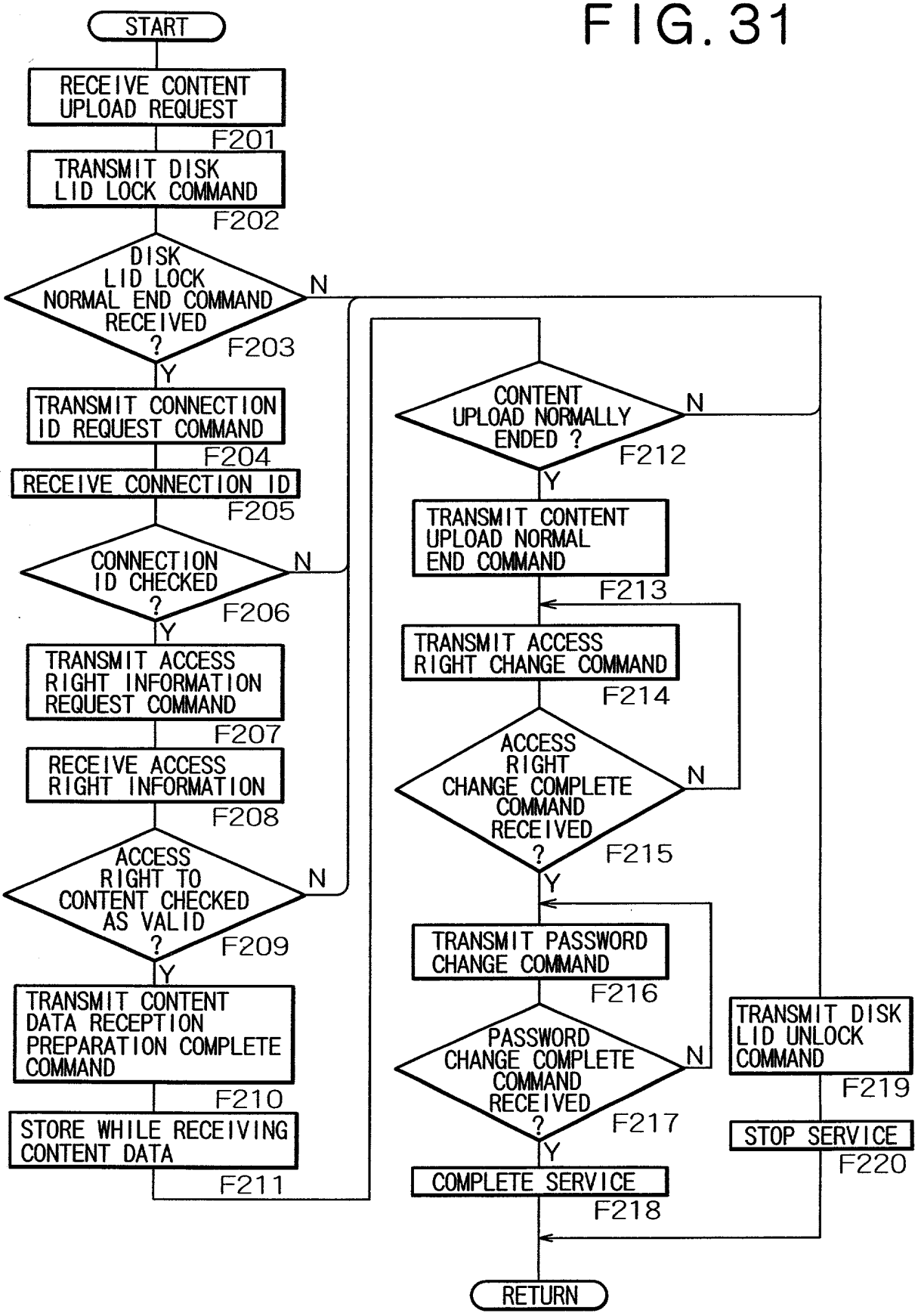
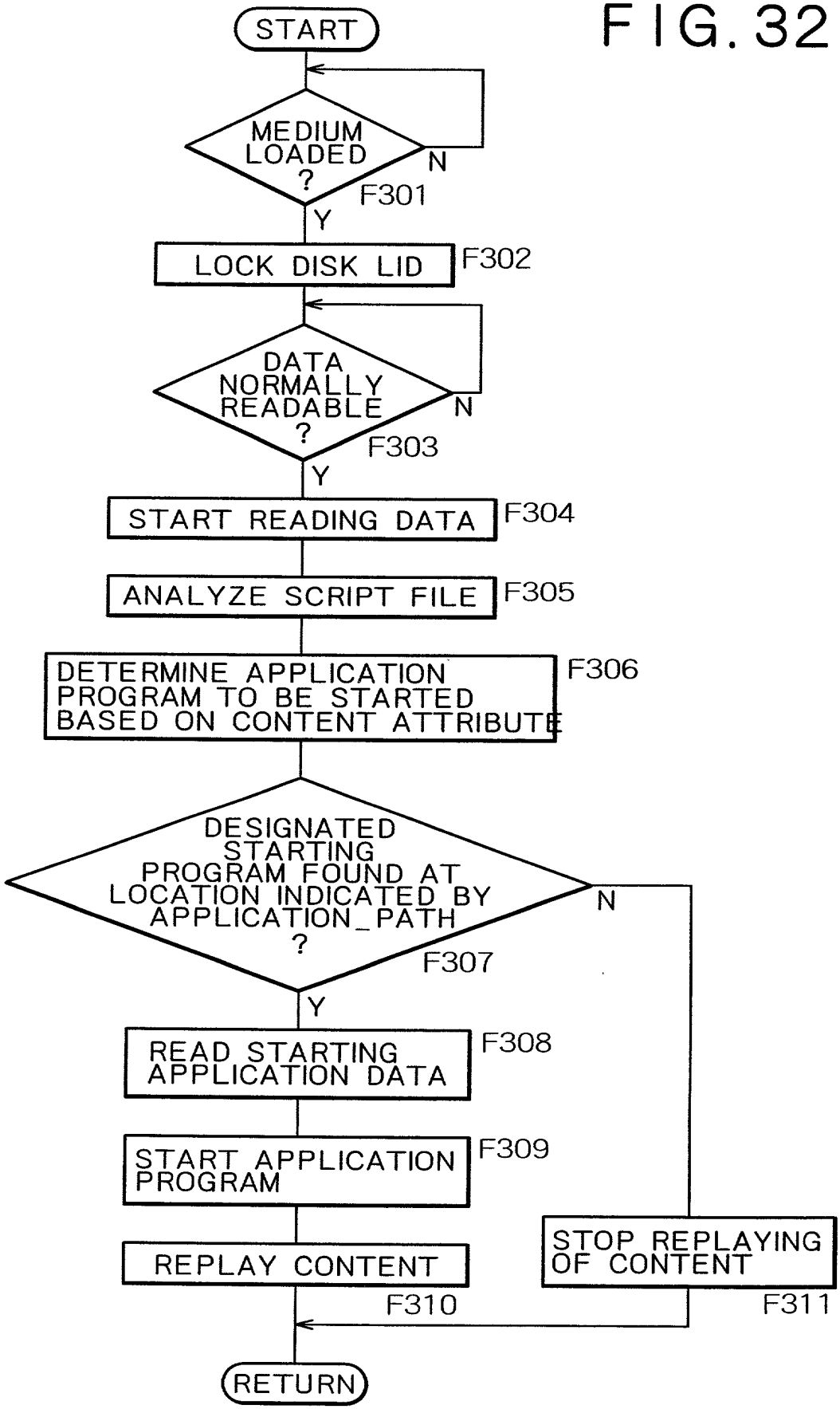

START
RECEIVE CONTENT UPLOAD REQUEST
F201
TRANSMIT DISK LID LOCK COMMAND
F202
DISK LID LOCK NORMAL END COMMAND RECEIVED ?
F203
N
Y
TRANSMIT CONNECTION ID REQUEST COMMAND
F204
RECEIVE CONNECTION ID
F205
CONNECTION ID CHECKED ?
F206
N
Y
TRANSMIT ACCESS RIGHT INFORMATION REQUEST COMMAND
F207
RECEIVE ACCESS RIGHT INFORMATION
F208
ACCESS RIGHT TO CONTENT CHECKED AS VALID ?
F209
N
Y
TRANSMIT CONTENT DATA RECEPTION PREPARATION COMPLETE COMMAND
F210
STORE WHILE RECEIVING CONTENT DATA
F211
CONTENT UPLOAD NORMALLY ENDED ?
F212
N
Y
TRANSMIT CONTENT UPLOAD NORMAL END COMMAND
F213
TRANSMIT ACCESS RIGHT CHANGE COMMAND
F214
ACCESS RIGHT CHANGE COMPLETE COMMAND RECEIVED ?
F215
N
Y
TRANSMIT PASSWORD CHANGE COMMAND
F216
PASSWORD CHANGE COMPLETE COMMAND RECEIVED ?
F217
N
Y
COMPLETE SERVICE
F218
TRANSMIT DISK LID UNLOCK COMMAND
F219
STOP SERVICE
F220
RETURN

FIG. 32


START
MEDIUM LOADED ?
N
F301
Y
LOCK DISK LID
F302
DATA NORMALLY READABLE ?
N
F303
Y
START READING DATA
F304
ANALYZE SCRIPT FILE
F305
DETERMINE APPLICATION PROGRAM TO BE STARTED BASED ON CONTENT ATTRIBUTE
F306
DESIGNATED STARTING PROGRAM FOUND AT LOCATION INDICATED BY APPLICATION_PATH ?
N
F307
Y
READ STARTING APPLICATION DATA
F308
START APPLICATION PROGRAM
F309
REPLAY CONTENT
F310
STOP REPLAYING OF CONTENT
F311
RETURN

T0022T"h6T2200T

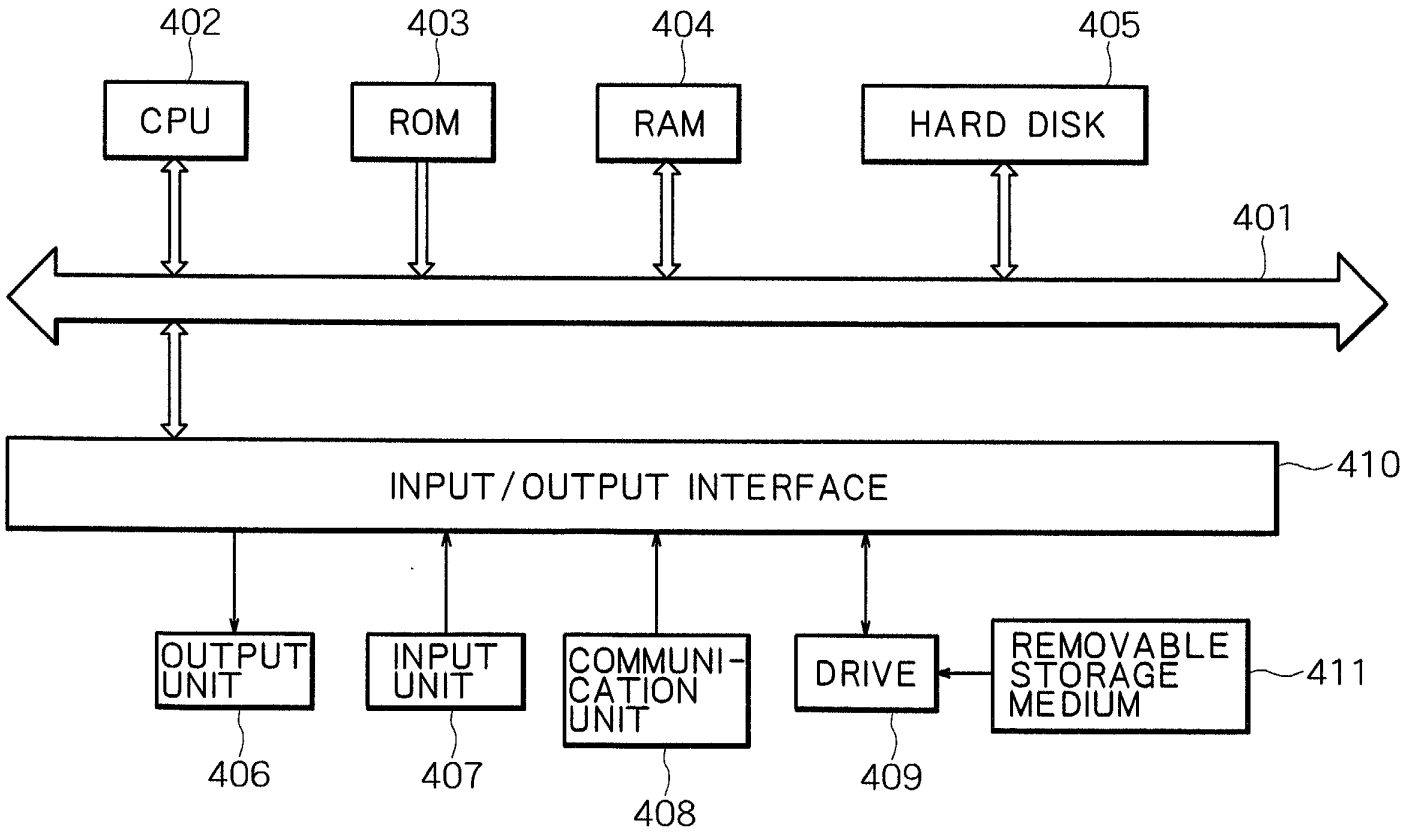



FIG. 33